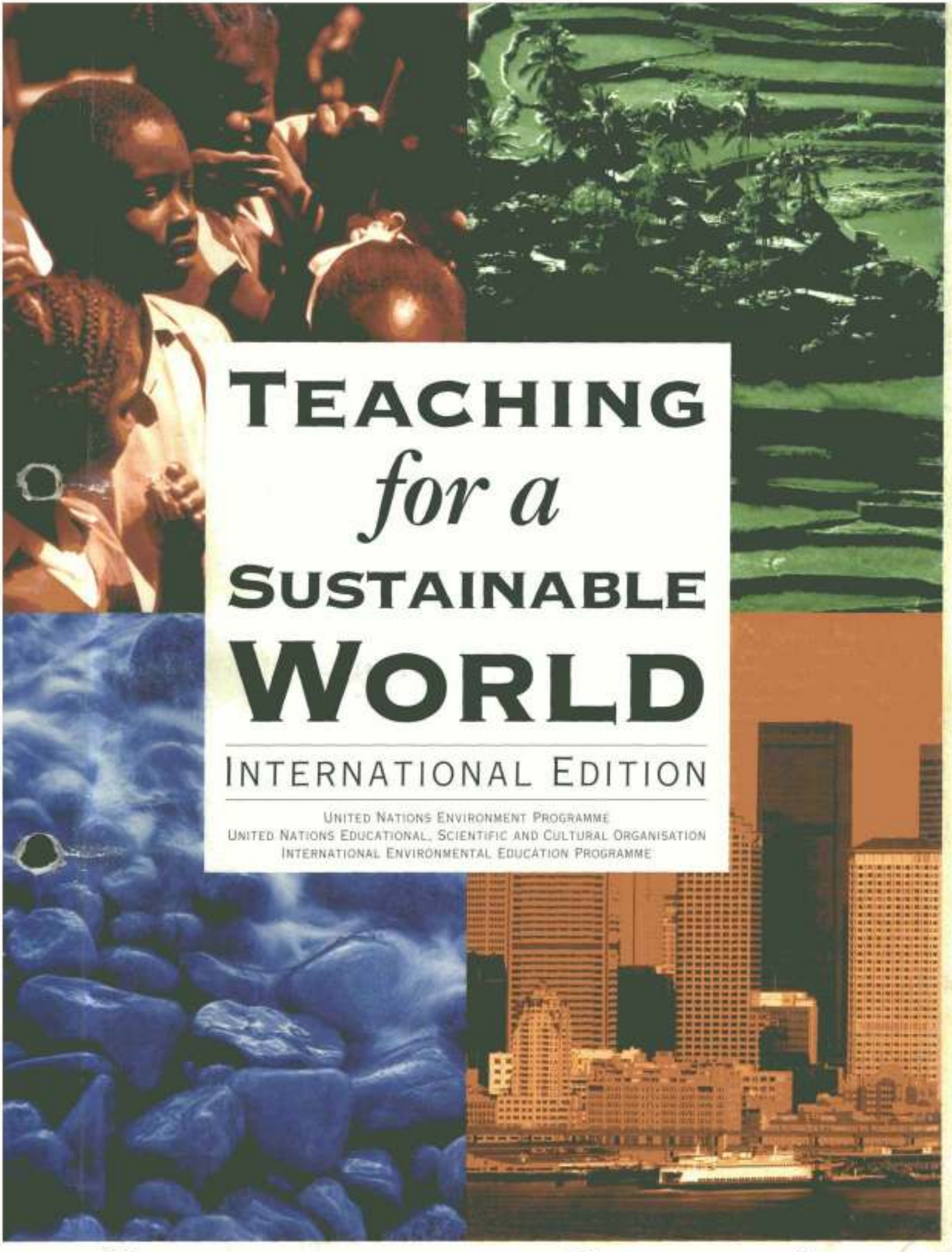


TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP

AusAID

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

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TEACHING FOR A SUSTAINABLE WORLD

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PREFACE

PREFACE

The origin of this publication lies in the recognition that *Teaching for a Sustainable World* - produced by Griffith University with the support of AusAid and the Australian Association for Environmental Education - was one of the first successful attempts, worldwide, to respond to the recommendation of *Agenda 21* on Sustainable Development Education.

Agenda 21 under its Chapter 36 further recommended that:

> *The UNESCO-UNEP International Environmental Education Programme should, in cooperation with the appropriate bodies of the United Nations system, governments, non-governmental organizations and others, establish a programme within two years to integrate the decisions of the Conference (UNCED) into the existing United Nations framework adapted to the needs of educators at different levels and circumstances.*

The above recommendation fully met the main objective of the IEEP, which is to *promote powerfully and effectively an environmentally sound and sustainable development for a higher quality of life everywhere through environmental education.*

The strands met. UNEP and UNESCO commissioned Griffith University to prepare this international edition of *Teaching for a Sustainable World* which will be widely disseminated to national Curriculum Development Centres to support the effort to develop teaching material in this vital field. It is our hope that this publication will be utilized, in part or in full, to produce appropriate national teaching material as well as assist in teacher training.

Finally, it gives me great pleasure to recognise the hard-work which Dr John Fien and his colleagues have put into producing this publication. It is also a tribute to an Australian initiative which now takes worldwide dimensions.

Dr Michael Atchia
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Appreciation is also extended to the Australian Association for Environmental Education Inc. for sponsoring the Australian edition of *Teaching for a Sustainable World* in 1993 and to the Development Education Project Scheme of AusAID, Australia's agency for international development, for its financial support and for the encouragement and guidance provided by Ms Cilla Ballard, a Development Education Officer within AusAID.

The workshops were written by a team of environmental education specialists who work in different countries, universities, government departments and community environmental and development organisations. All gave of their time and talents willingly and for the reimbursement of their costs only. The project would have been impossible without them. Their employing organisations are to be congratulated for providing the environment which allows this kind of professionalism to flourish.

Guidance in the development of the Australian edition of *Teaching for a Sustainable World* was provided by a seminar in March 1992 attended by John Fien, Rob Gilbert, Kathleen Gordon, Brian Hoepper, Melva Hobson, Hilary Macleod, Jan Oliver, Jim Richmond, Ian Robottom, Michael Singh, Helen Spork and Rick Swindell. David Hicks of Bath College of Higher Education served as a consultant at this stage of the project and edited the first drafts of several workshops.

Advice for this international edition of *Teaching for a Sustainable World* was obtained in several ways. The advice of the Associate Editors was of great assistance in identifying areas and themes for adaptation and revision. Offers by the following specialists to advise on individual modules was also most valuable: Yeoh Oon Chye (Singapore); Thilla Chelliah (Malaysia); Siti Hawa Ahmad (Malaysia); Xu Hui (People's Republic of China); J P Herath (Sri Lanka); J S Gill (India); Ghulan Mohammed (Pakistan); and Edward Rugumayo (Kenya).

The Australian edition was featured at the July 1993 UNESCO Asia-Pacific Seminar on Teacher Education and Environmental Education held at Griffith University. The participants at this seminar made several recommendations on revision requirements and provided valuable assistance in identifying the themes of new modules such as: culture and religion in relation to sustainable living, sustainable agriculture and rural development, alternative technology, the impact of rapid urbanisation on living in a sustainable way, and health and environment in relation to choosing healthy and sustainable lifestyles. These themes have been incorporated in this international edition.

The delegates at this seminar included: Halima Khatun (Bangladesh); Ni Chuan-rong (China); Saras Reddy (Fiji); Yee-wang Fung, Philip Stimpson, Catherine Ka Ki Wan (Hong Kong); M J Ravindranath (India); H Mohammed Fakry Gaffor (Indonesia); Datin Fadzilah bt Muhammad Ali, Thilla Chelliah, David Bowden, Chew Chee Keong (Malaysia); Hum Gurung (Nepal); Marie Pereira-D'Souza

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GUIDELINES *for* CONDUCTING WORKSHOPS

AUDIENCE

The particular audiences for the workshops in this manual are both students studying pre-service teacher education courses and experienced teachers involved in continuing or in-service education. Thus, the materials may be of value to workshop facilitators engaged in professional development activities in colleges and universities, professional associations, education systems, teachers' centres, community environment and development organisations, and schools.

The workshops have been written with the needs of lecturers and other workshop facilitators in mind. Thus, the activities have been phrased in terms of the things that the workshop facilitator needs to do when planning and leading a workshop.

FORMAT

Each workshop has a common format, which includes the following headings and sections.

1. **Introduction:** Brief rationale and background information
2. **Outcomes:** The objectives of the workshop
3. **Workshop Outline:** A brief overview of the major components of the workshop
4. **Materials Required:** Organised in categories, as below, as appropriate:
   - A. Provided
     - Overhead Transparency Masters
     - Resources (handout masters to be copied for participants)
     - Readings (background for facilitators and participants)
   - B. To obtain
     - Materials that need to be obtained by the workshop facilitator and prepared in advance.
5. **Additional Reading:** A bibliography of materials used by the author in writing the workshop and which could prove useful for facilitators seeking additional background information.
6. **Activities:** These are always written in the form of instructions for workshop facilitators. This section provides direct suggestions and refers the facilitator to the resources in the workshop module and explains how they can be used.

THE EXPERIENTIAL PROCESS

Generally, each activity is based upon a concrete learning experience which requires participants to work individually, in pairs or in small groups to complete a task. Thus, the workshops promote active experiential approaches to learning and model the sorts of learning experiences that can achieve the wide range of knowledge, skills, values and participation objectives of environmental education. Lecture-style input is kept to a minimum and always referred to as a 'mini-lecture'.

The workshops are generally presented in three phases:

- an introductory 'ice-breaker' activity which seeks to build group rapport and provide an overview of the objectives and sequence of activities in the workshop;
- a developmental phase which teaches particular concepts about the workshop topic and/or particular teaching strategies; and
- a concluding activity which provides an opportunity for participants to apply what they have learnt in the workshop either to their own teaching situations or to their own personal and professional growth.

ADAPTING THE WORKSHOPS

The modules in this manual generally provide all the materials that are required to conduct the workshop. Where this is not the case, the additional materials that the facilitator needs to obtain and prepare are listed (as in section 4B above).

However, two points should be noted:

- *It is not necessary to use any or all the resources in the form that they are provided.*

  Facilitators are encouraged to obtain or develop local variations of the materials or to adapt the provided ones so that the workshops and the materials are as relevant as possible to the cultural and educational contexts in which they are working.
- *The level of available educational technology may vary between regions.*

  The authors have prepared the workshops assuming that only overhead projectors and some form of printing or photocopying are available. Where facilities are available, workshop facilitators are encouraged to integrate various audio-visual resources such as slides, videos and educational television programmes into their versions of the workshops. This will greatly enrich the experiences and learning of participants. Alternatively, instead of making overhead transparencies, some facilitators may choose to make charts and posters of some or all of the display material provided as overhead transparency masters.

The key word in the use of the workshop modules in this manual is *flexibility*. Workshop facilitators are strongly encouraged to use the workshop materials and activities as guides only. The more that facilitators adapt, change, revise and add to the prepared workshops, the happier the workshop authors and editors of this manual will be.

Indeed, it is vital to the success of the workshops that the outcomes, materials and activities be adapted to suit the educational and cultural contexts in which they are being used.

USING THE WORKSHOPS

The workshops may be used in a great many ways and combinations. However, it should be noted that the first four workshops were written to be introductory. These workshops provide an introduction to:

- global environmental and development issues
- environmental education
- development education
- the linkages and similarities between environmental and development education.

These four workshops may be considered as a hub while the remaining ones are spokes that address particular themes and specialities in teaching for a sustainable world and may be used in any combination and sequence, but, preferably, after the four core workshops have been completed.

Probably the most common use will be as *'one-off' activities* incorporated into an in-service or pre-service education course being conducted for a particular group of teachers. This may be as part of an afternoon or weekend in-service workshop, or it may be when a lecturer in pre-service teacher education, e.g. in a science, geography or social science curriculum/methods course, chooses to use one of the workshops (preferably an adapted version) to teach a particular concept or teaching skill relevant to the course.

Second, several of the workshops could be used as *an integrated set* - again, preferably, with local adaptations - for a core or elective course/subject/programme in environmental and/or development education. This approach may be most desirable if it is feared that the infusion approach may lead to the duplication of some topics and the omission of others, or some participants missing out altogether.

Third, the materials may be used as the basis for a linked programme of professional and curriculum development for teacher education staff. Familiarisation with the concepts developed in these workshops and the experiential learning strategies common to them may provide new skills for facilitators and give them new ideas for their existing courses and programmes. For example, such familiarisation may provide a body of ideas and criteria to assist in the review of an existing teacher education programme and may guide decisions about the goals, content, structure and approaches to be adopted when new programmes are being designed.

The workshops have been written to facilitate their use in all of these ways.

TEACHING *for a* SUSTAINABLE WORLD

ENVIRONMENTAL EDUCATION FOR A NEW CENTURY

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In the middle of the 20th century, we saw our planet from space for the first time. Historians may eventually find that this vision had a greater impact on thought than did the Copernican revolution of the 16th century, which upset the human self-image by revealing that the Earth is not the centre of the universe. From space, we see a small and fragile ball dominated not by human activity and edifice but by a pattern of clouds, oceans, greenery, and soils. Humanity's inability to fit its doings into that pattern is changing planetary systems, fundamentally. Many such changes are accompanied by life-threatening hazards. This new reality, from which there is no escape, must be recognized - and managed.

World Commission on Environment and Development, *Our Common Future*, 1987, p. 1.

Schools and teachers are often called upon to help assuage society's problems. This is to be expected, given the government funds allocated to education and the desire for schooling to be relevant to social questions, issues and problems. Thus, there are demands that school programmes be vocationally relevant, promote intercultural appreciation and harmony, develop personal and interpersonal skills, encourage active and informed citizenship, and so on. Hazlett (1979) has described the policy process through which social problems in society become educational ones when:

> *The nation tends to reduce political, social, and economic problems to educational ones and claims to expect schools to cure present ills and provide for a brighter tomorrow for individuals and the collectivity.* (p. 133)

Multicultural education, school-industry links, consumer education and political education are curriculum responses to this process. There is justifiable debate about

the ethics and ideological motivations of this process and about the style of political and administrative decision-making often involved. However, there can be little dispute over the fact that such 'educational problems' and associated curriculum developments in schools place additional demands on teacher education programmes.

Environmental education and development education are other such 'educational problems' which require a response in schools and in teacher education. The rising levels of public awareness of the problems of environmental degradation and global inequalities in recent decades are manifested in growing concerns over the stability of ecosystems, the sustainability and equity of present patterns of development, and the quality of life to be enjoyed by present and future generations. Many schools have been motivated by student, parent, teacher and government interest in these issues to incorporate environmental and development education into their programmes and have developed a range of innovative programmes and activities. These have been supported by the policy processes within education systems and the provision of guidelines, resources, and opportunities for professional development. Teacher educators, especially in geography, social education and science curriculum courses, have responded in a number of ways to the growing need for professional development in environmental education at both the pre-service and in-service education levels, also.

The Challenge of Sustainable Development

The last decade of the 20th century is a time of heightened public awareness of the scale, severity and complexity of many global problems. Numerous reports indicate that public concern for the environment is at unprecedented levels throughout the world (Dunlap, Gallup and Gallup, 1992). Concern has been growing since the early 1960s over problems as diverse, yet global in impact, as atmospheric warming and climatic change, the destruction of rainforests and threats to biodiversity, accelerating rates of land degradation and desertification, population-resource imbalances, urban decay, nuclear accidents, the disposal of toxic wastes, and a range of other threats to the quality of human life and the sustainability of ecosystems.

There are also rising levels of concern about the problems associated with global inequalities in standards of living and human well-being. These problems include regional conflicts, great imbalances in the consumption of resources between countries and regions, droughts and famine - sometimes on near-continental scales, the increasing marginalisation of women, ethnic minorities, indigenous peoples, the unemployed and the physically disabled, accumulating foreign debt, the failure of the world to solve the trade and transport problems that still cause hunger and malnutrition, and the necessity for many people to over-exploit the resources of their local environment for daily survival.

The United Nations World Commission on Environment and Development (1987) recognised the interdependence of these environmental and development issues. It noted that:

> *Until recently, the planet was a large world in which human activities and their effects were neatly compartmentalized within nations ... and within broad areas of concern (environmental, economic, social). These compartments have begun to dissolve. This applies in particular to the various global 'crises' that have seized public concern, particularly over the last decade. These are not separate crises: an*

environmental crisis, a development crisis, an energy crisis. They are all one. (p. 4)

The Commissioners reported that this realisation made them focus on one central theme: many present development trends leave increasing numbers of people poor and vulnerable and at the same time degrade the natural environment. As Elizabeth Dodswell, the Executive Director of the United Nations Environment Programme (UNEP) has stated:

> *One point is of pivotal significance. No long-term strategy of poverty alleviation can succeed in the face of environmental forces that promote persistent erosion of the natural resources upon which we all depend. And no environmental protection programme can make headway without removing the day-to-day pressures of poverty that leave people little choice but to discount the future so deeply that they fail to protect the resource base necessary for their own survival and their children's well-being.* (Dodswell, 1995, p. 2)

The conclusion of the World Commission was that humankind requires new, more ecologically sustainable and socially just, approaches to development. In fact, many of these approaches are not 'new' but are to be found in the wisdom and values that inform the principles of living sustainably that have characterised indigenous and farming peoples in many parts of the world for thousands of years. They are also to be found in the programmes and campaigns for appropriate and sustainable development of the ecology movements around the world, and especially in the women's ecology movement in the South (Shiva, 1989; Rodda, 1991).

People and their governments are yet to realise the full implications of the message of sustainable development. However, they are becoming increasingly aware of the links that exist between human development and the environment. Instead of seeing the environment as nature and natural systems alone, we are coming to see it in an holistic sense as the totality of our surroundings and existence which results from the way we use nature and its resources to satisfy our needs and wants. This means seeing the environment as a complex web of global social, cultural, economic and political, as well as geo- and bio-physical, components. It also means realising that environmental and development problems cannot be understood without reference to social, economic and political values, and that managing the global crisis will depend upon changes in personal values, lifestyle choices and global patterns of development and trade.

Relating the indivisible nature of these dimensions of the environment with the quality of life and living conditions of people all over the world, Dodswell has stressed the wisdom of the outcomes of the 1992 United Nations Conference on Environment and Development (the Earth Summit) which tied the achievement of environmental sustainability with overcoming the problems of poverty, illiteracy and militarism. She writes:

> *... the Earth Summit at Rio de Janeiro saw the essential indivisibility of environment, peace and development. It also recognized that global interdependence could no longer be conceived only in economic terms. Alongside, there was the recognition that the root causes of global human insecurity reached far below the calculus of military parity. They were related to the instability spawned by widespread poverty, squalor, hunger, disease and illiteracy. They were connected to the degradation of the environment. They were enmeshed in inequity and injustice.* (Dodswell, 1995, p. 2)

To help bring about the changes in social and economic thinking, practices and institutions that can promote this view, Schleicher (1989) writes of the need for a new 'ecological ethic, ... an ecologically oriented value system' based upon 'fundamental change(s) in human attitudes and actions towards ourselves and the environment' (pp. 277-278). The scope of such a change in social values has been likened to a change in social paradigms or world views. This would involve a process of change towards social systems, institutions and practices guided by values such as: empathy with other species, other people and future generations, respect for natural and social limits to growth, support for careful planning in order to minimise threats to nature and the quality of life, and a desire for change in the way most societies conduct their economic and political affairs (Milbrath, 1989, pp. 58-87).

While there is debate about particular directions and the pace of this 'paradigm shift' and about the effectiveness of different strategies for social change, there seems to be wide agreement that education has an important role to play in motivating and empowering people to participate in environmental improvement and protection. Indeed, as early as two decades ago, education was described by one commentator as 'the greatest resource' in this endeavour (Schumacher, 1973, p. 64).

The four major international environment reports of recent years have emphasised this also. The common theme of these reports is the search for sustainable patterns of development and living that can redress present day environmental decline without jeopardising the ecosystem or resource base for future generations.

The Brundtland Report of the World Commission on Environment and Development (1987) argued that 'the world's teachers ... have a crucial role to play' in helping to bring about the 'the extensive social changes' needed for sustainable development (p. xiv). The 1980 World Conservation Strategy was quite explicit about the role of education in bringing about such changes. It argued that:

> *Ultimately, the behaviour of entire societies towards the biosphere must be transformed if the achievement of conservation objectives is to be assured. A new ethic, embracing plants and animals as well as people is required for human societies to live in harmony with the natural world on which they depend for survival and well-being. The long term task of environmental education is to foster or reinforce attitudes and behaviours compatible with this new ethic.* (IUCN, UNEP and WWF, 1980, Section 13)

This message was repeated in *Caring for the Earth: A Strategy for Sustainable Living* which was prepared as the World Conservation Strategy for the 1990s (IUCN, UNEP and WWF, 1991). *Caring for the Earth* argues that education has a vital role to play in ensuring that people learn, accept and live by the principle that 'living sustainably depends on accepting a duty to seek harmony with other people and with nature' (p. 8):

> *Sustainable living must be the new pattern for all levels: individuals, communities, nations and the world. To adopt the new pattern will require a significant change in the attitudes and practices of many people. We will need to ensure that education programmes reflect the importance of an ethic for living sustainably.* (IUCN, UNEP and WWF, 1991, p. 5)

Agenda 21 is the internationally agreed report of the United Nations Conference on Environment and Development or 'Earth Summit' which was held in Rio de Janeiro

in June 1992 . *Agenda 21* devotes a whole chapter to the role of environmental education in relation to sustainability:

> *Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues.... It is critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making.* (UNCED, 1992, Chapter 36, p. 2)

The theme of ecologically sustainable development which is central to all these calls for environmental education is also central to the vision of a desirable society held by many people today. For example, a recent Australian study of alternative futures and educational objectives, *Visions of a Future Australian Society: Towards an Educational Curriculum for 2000 AD and Beyond*, found that ecological sustainability ranked second only to social justice in a priority listing of 22 societal and educational goals (Campbell, McMeniman and Baikaloff, 1992).

It is important to understand what is meant by ecological sustainability in such an expectation of education. Unfortunately, definitions of sustainability do vary (Fien, 1993a; Orr, 1992). However, at the heart of sustainable development is the mitigation of the impacts humans make on the earth and the way we organise the flows, production and distribution of resources and wastes, which in turn affect what political scientists define as the essential issues of politics: 'Who gets what, when, and how?' (after Orr, 1992, p. 145).

When sustainability is bracketed with social justice in visions of desirable futures, it is possible to identify a definition of sustainability - and a range of related issues - that education should address if those visions are to be achieved. Such a definition of sustainable development sees it as a process which requires that the use of environments and resources by one group of people does not jeopardise the environments and well-being of people in other parts of the world or destroy the capacities of future generations to satisfy their reasonable needs and wants. Issues of ecological sustainability and social justice that flow from such a view include the following:

- There are great differences in the availability and use of resources around the world with poverty and need in some areas matched by over-production and over-consumption in others.

  How can the over-consumption, waste and misuse of resources by some people be reduced? How can the severe poverty that causes many to exploit the earth just to survive be eliminated? How can the pressure on the environment from both causes be overcome?

- Some economic activities do great harm to environments, resources and communities.

  How can economic activity be made of benefit to the communities and the companies involved, and without critical damage to the environment?

- Economic growth in some parts of the world is so high that it is leading to the production and consumption of many items that are super-luxuries and use resources that could be used to satisfy the needs of many of the world's poor.

  How can the resources consumed by such luxuries be redirected to aid the poor or be conserved for future generations?

- Relatively high population densities and growth rates in certain parts of the world, and the associated pressure on the local resource base, are symptoms of

the legacy of colonialism and present-day structural inequalities in the world economic system rather than causes of environmental problems. Appropriate social development lies at the heart of the solution to population and environmental pressures.

How can the nexus between the environment, social development and population growth be formulated to ensure the sustainable use of resources?

- The indigenous and farming peoples of many countries have developed an ethic of sustainability and associated land use practices that have preserved their culture and harmony between people and nature for millennia.

  How can the rights of these people be maintained and the knowledge and wisdom they possess be shared with others in all parts of the world?

- Women and young people have a vital role to play in environmental care and development, now and into the future. They have viewpoints, skills and interests that can help maximise the potential for sustainable development.

  How can the wisdom, courage and talents of women and young people be used as a model for sustainable development policies and practices?

- The most effective arena for action on sustainability and justice issues is the local community.

  How can people best organise themselves locally - and liaise with others nationally and globally - to collaborate in the movement towards sustainable development?

(after Beddis and Johnson, 1988)

Readings 1 and 2 provide an overview of the key principles of sustainable development from the World Commission on Environment and Deveopment (1987) and the recommendations of the United Nations Conference on Environment and Development (UNCED 1992).

Education for Sustainable Living

These are issues that educationalists in many countries have been slow to address. In concentrating on issues of class and economic reproduction and the reproduction of racial and gender inequalities, educationalists have been slow to analyse the relationship between education and the processes of the world economy, the nature of the dominant model of what counts as economic development, and the environmental destruction upon which it is based. D'Urso (1990) has described the environmental crisis and educational responses to it as 'curiously neglected by socio-cultural theorists of education' and urges them to strike 'beyond the bounds of current educational concerns' to establish environmental education as 'a new and vitally important discourse' (p. 92).

Only recently has this analysis been extended to consider the relationship between education and the reproduction of the environmental values and practices of global capital. For example, Trainer (1990) has argued that both the overt and the hidden curricula of schools play a major role in reproducing the ecologically unsustainable values of 'industrial, affluent, consumer society' (p. 105), including the unquestioned desirability of economic growth and a competitive economy, the importance of individual self-advancement over community well-being, and the correctness of allowing the profit motive and the market to determine economic and social priorities (p. 107).

Issues of environment, social justice and sustainable development pose important questions for the future of human society. They are also important for those who wish to teach for a just and sustainable future and those who are involved in the education of such teachers. This means that those involved in environmental and development education, at whatever level, need to activate the socially critical or reconstructionist tradition in education and promote approaches to curriculum planning and pedagogy that can help integrate social justice and ecological sustainability into a vision and a mission of personal and social change. Orr (1992) argues that such an approach to education is 'unavoidably political' but that to attempt to 'stand aloof from the decisions about how and whether life will be lived in the twenty-first century ... is to condemn ourselves to irrelevance' (p. 145).

The social, economic, political and ecological imperatives of the concept and processes of sustainable development outlined in this section have established a renewed agenda for environmental education which links it very closely with development education. The World Conservation Union (IUCN) has described this new direction for environmental education as 'education for sustainable living'. To obtain a clear definition of education for sustainable living, it is helpful to define environmental education and development education and to uncover the links between them.

According to Stevenson (1987), environmental education involves:

> *... the intellectual tasks of critical appraisal of environmental (and political) situations and the formulation of a moral code concerning such issues, as well as the development of a commitment to act on one's values by providing opportunities to participate actively in environmental improvement.* (p. 69)

A 1975 UN definition of development education states that:

> *The objective of development education is to enable people to participate in the development of their community, their nation and the world as a whole. Such participation implies a critical awareness of local, national and international processes.*
>
> *Development education is concerned with issues of human rights, dignity, self-reliance and social justice in both developed and developing countries. It is concerned with the causes of under-development and the promotion of an understanding of what is involved in development, of how different countries go about undertaking development, and of the reasons for and ways of achieving a new international economic and social order.* (quoted in Hicks and Townley 1982)

There are strong similarities between these two definitions and, together, they may be seen as the core of education for sustainable living. Education for sustainable living is defined by the IUCN Commission on Education and Communication (1993) as a process which:

> *... develops human capacity and creativity to participate in determining the future, encourage technical progress as well as fostering the cultural conditions favouring social and economic change to improve the quality of life and more equitable economic growth while living within the carrying capacity of supporting ecosystems to maintain life indefinitely.* (p. 6)

The British Environment, Development, Education and Training Group's report, *Good Earth-Keeping: Education, Training and Awareness for a Sustainable Future*, has such goals in the light of contemporary thinking on the role of environmental education in promoting a sustainable environment. This groups calls this 'education for sustainability':

We believe that education for sustainability is a process which is relevant to all people, and that, like sustainable development itself, it is a process rather than a fixed goal. It may precede - and it will always accompany - the building of relationships between individuals, groups and their environment...

We argue here that education for sustainability is a process which:

- *enables people to understand the interdependence of all life on this planet, and the repercussions that their actions and decisions may have both now and in the future on resources, on the global community as well as their local one, and on the total environment.*
- *increases people's awareness of the economic, political, social, cultural, technological and environmental forces which foster or impede sustainable development.*
- *develops people's awareness, competence, attitudes and values, enabling them to be effectively involved in sustainable development at local, national and international level, and helping them to work towards a more equitable and sustainable future. In particular, it enables people to integrate environmental and economic decision-making.*
- *affirms the validity of the different approaches contributed by environmental education, and development education and the need for the further development and integration of the concepts of sustainability in these and other related cross-disciplinary educational approaches, as well as in established disciplines.* (Sterling/EDET Group, 1992, p. 2)

The NGO Forum at the Earth Summit endorsed a treaty on Environmental Education for Sustainable Societies and Global Responsibility (NGO Forum, 1992) which developed a number of principles to guide the future direction of environmental education so that objectives such as these may be attained: These principles are:

1. *Education is the right of all; we are all learners and educators.*
2. *Environmental education, whether formal, non-formal or informal, should be grounded in critical and innovative thinking in any place or time, promoting the transformation and construction of society.*
3. *Environmental education is both individual and collective. It aims to develop local and global citizenship with respect for self-determination and the sovereignty of nations.*
4. *Environmental education is not neutral but is value-based. It is an act for social transformation.*
5. *Environmental education must involve a holistic approach and thus an inter-disciplinary focus in the relation between human beings, nature and the universe.*
6. *Environmental education must stimulate solidarity, equality, and respect for human rights involving democratic strategies and an open climate of cultural interchange.*
7. *Environmental education should treat critical global issues, their causes and inter-relationships in a systemic approach and within their social and historical contexts. Fundamental issues in relation to development and the environment, such as population, health, peace, human rights, democracy, hunger, degradation of flora and fauna, should be perceived in this manner.*
8. *Environmental education must facilitate equal partnerships in the processes of decision-making at all levels and stages.*
9. *Environmental education must recover, recognise, respect, reflect and utilise indigenous history and local cultures, as well as promote cultural, linguistic*

and ecological diversity. This implies acknowledging the historical perspective of native peoples as a way to change ethnocentric approaches, as well as the encouragement of bilingual education.

10. *Environmental education should empower all peoples and promote opportunities for grassroots democratic change and participation. This means that communities must regain control of their own destiny.*
11. *Environmental education values all different forms of knowledge. Knowledge is diverse, cumulative and socially produced and should not be patented or monopolised.*
12. *Environmental education must be designed to enable people to manage conflicts in just and humane ways.*
13. *Environmental education must stimulate dialogue and cooperation among individuals and institutions in order to create new lifestyles which are based on meeting everyone's basic needs regardless of ethnic, gender, age, religious, class, physical or mental differences.*
14. *Environmental education requires a democratisation of the mass media and its commitment to the interests of all sectors of society. Communication is an inalienable right and the mass media must be transformed into one of the main channels of education, not only be disseminating information on an egalitarian basis, but also through the exchange of means, values and experiences.*
15. *Environmental education must integrate knowledge, skills, values, attitudes and actions. It should convert every opportunity into an educational experience for sustainable societies.*
16. *Education must help develop an ethical awareness of all forms of life with which humans share this planet, respect all life cycles and impose limits on humans' exploitation of other forms of life.*

These principles are beginning to become important in reframing conceptions of environmental education (Robottom, 1994). In Canada, the National Round Table on the Environment and the Economy has sponsored the Learning for a Sustainable Future organisation which has published a framework of objectives for implementing the principles of education for sustainability in the school curriculum (Learning for a Sustainable Future, 1993). These are set out in Figure 1.

Many aspects of traditional approaches to environmental education contribute to education for sustainable living. For example, the UNESCO-UNEP International Environmental Education Programme has sought to integrate issues of ecological sustainability and social justice. For example, the preamble to *The Belgrade Charter* (UNESCO-UNEP, 1976), upon which many international developments in environmental education have been based, located environmental education within the global movement for a New International Economic Order directed at solving the social and environmental problems that flow from poverty, hunger and exploitation:

> *Inequality between the poor and the rich among nations and within nations is growing and there is evidence of increasing deterioration of the physical environment in some forms on a world-wide scale....*
>
> *What is being called for is the eradication of the basic causes of poverty, hunger, illiteracy, pollution, exploitation and domination. The previous pattern of dealing with these crucial problems on a fragmentary basis is no longer workable....*

EDUCATION FOR A SUSTAINABLE FUTURE:
THE KNOWLEDGE, SKILLS AND VALUES NEEDED

Like the society it serves and will shape, today's education is in transition, searching to identify elements of change, to preserve the cornerstones of traditional values and to test tentative and optimistic assumptions about the world of future generations. It is time to reflect, to remember, to set contexts and to develop viable plans so that the transition can be made as smoothly as possible into a more sustainable 21st century. The clearest, most urgent and riveting context that education has ever been presented with is that of its contribution to the survival of society and its planetary environment, and beyond that, its contribution towards a sustainable future.

This perception of the future suggests that knowledge, skills and values are central to education for sustainable development.

This framework (of objectives) ... is in no way intended to impose a model for curriculum planning. Rather, it is a perspective for reflection on the implications of education for a sustainable future and for curriculum approaches to attain it. In this context, a solid foundation of the basic skills of literacy, numeracy, geographic perceptions and methodologies for scientific enquiry is needed. It has never been more crucial to have a literate and trained population. We believe the framework incorporates the idea that change will continue to take place all over the world and that we must constantly reassess the knowledge, skills and values that students must learn.

Knowledge

1. The planet earth as a finite system and the elements that constitute the planetary environment.
2. The resources of the earth, particularly soil, water, minerals, etc., their distribution and their role in supporting living organisms.
3. The nature of ecosystems and biomes, their health and their interdependence within the biosphere.
4. The dependence of humans on the environmental resources for life and sustenance.
5. The sustainable relationship of native societies to the environment.
6. The implications of resource distribution in determining the nature of societies and the rate and character of economic development.
7. Characteristics of the development of human societies including nomadic, hunter-gatherer, agricultural, industrial and post-industrial, and the impact of each on the natural environment.
8. The role of science and technology in the development of societies and the impact of these technologies on the environment.
9. Philosophies and patterns of economic activity and their different impacts on the environment, societies and cultures.
10. The process of urbanisation and the implications of de-ruralisation.
11. The interconnectedness of present world political, economic, environmental and social issues.
12. Aspects of different perspectives and philosophies concerning the ecological and human environments.
13. Co-operative international and national efforts to find solutions to common global issues, and to implement strategies for a more sustainable future.

14. The implications for the global community of the political, economic and socio-cultural changes needed for a more sustainable future.
15. Processes of planning, policy-making and action for sustainability by governments, businesses, non-governmental organisations and the general public.

Skills

1. Frame appropriate questions to guide relevant study and research.
2. Define such fundamental concepts as environment, community development and technology, and apply definitions to local, national and global experience.
3. Use a range of resources and technologies in addressing questions.
4. Assess the nature of bias and evaluate different points of view.
5. Develop hypotheses based on balanced information, critical analysis and careful synthesis, and test them against new information and personal experience and beliefs.
6. Communicate information and viewpoints effectively.
7. Work towards negotiated consensus and co-operative resolution of conflict.
8. Develop co-operative strategies for appropriate action to change present relationships between ecological preservation and economic development

Values

1. An appreciation of the resilience, fragility and beauty of nature and the interdependence and equal importance of all life forms.
2. An appreciation of the dependence of human life on the resources of a finite planet.
3. An appreciation of the role of human ingenuity and individual creativity in ensuring survival and the search for appropriate and sustainable progress.
4. An appreciation of the power of human beings to modify the environment.
5. A sense of self-worth and rootedness in one's own culture and community.
6. A respect for other cultures and a recognition of the interdependence of the human community.
7. A global perspective and loyalty to the world community.
8. A concern for disparities and injustices, a commitment to human rights, and to the peaceful resolution of conflict.
9. An appreciation of the challenges faced by the human community in defining the processes needed for sustainability and in implementing the changes needed.
10. A sense of balance in deciding among conflicting priorities.
11. Personal acceptance of a sustainable lifestyle and a commitment to participation in change.
12. A realistic appreciation of the urgency of challenges facing the global community and the complexities that demand long-term planning for building a sustainable future.
13. A sense of hope and a positive personal and social perspective on the future.
14. An appreciation of the importance and worth of individual responsibility and action.

Figure 1: A framework of objectives for implementing the principles of education for sustainability in the school curriculum

Source: *Learning for a Sustainable Future*, 1993, pp. 3-5.

INTRODUCTION

> *It is absolutely vital that the world's citizens insist upon measures that will support the kind of economic growth which will not have harmful repercussions on people; that will not in any way diminish the environment and their living conditions....*
>
> *We need nothing more than a new global ethic - an ethic which espouses attitudes and behaviour for individuals and societies which are consonant with humanity's place within the biosphere ....*
>
> *It is within this context that the foundations must be laid for a world-wide environmental education programme that will make it possible to develop new knowledge and skills, values and attitudes, in a drive towards a better quality of environment and, indeed, towards a higher quality of life for the present and future generations living within that environment.* (UNESCO-UNEP, 1976, pp. 1-2)

However, education for sustainable living requires a reconceptualisation of some aspects of environmental education and some of the assumptions upon which it has often been based. Much of the dominant discourse in environmental education, even some of the prescriptions for environmental education objectives, content and teaching methods that have emanated from the International Environmental Education Programme and other sources of legitimation in environmental education, such as journals and textbooks, have been based upon a technocentric approach to environmentalism which favours initiating young people into the concepts and skills needed for finding scientific and technological solutions to environmental problems without addressing their root social, political and economic causes (e.g. see Huckle, 1983; Fien, 1993b).

Approaches to environmental education which ignore the issues of justice and ecological sustainability are guided by a technocratic rationality and behaviouristic goals of reductionist Western science and Western approaches to development (Robottom, 1989; Greenall Gough, 1993). Ecofeminists such as Carolyn Merchant (1980) and Vandana Shiva (1989) have traced the patriarchal assumptions and attitudes to nature, women and development upon which Western science is based as a major cause of environmental exploitation and the increasing marginalisation of many of the world's people. Environmental educators need to be aware of this critique of the assumptions upon which environmental education has developed and examine the call made by Shiva (1989) for a new environmental science. In directing us towards a new environmental 'science', she urges us to consider the knowledge base and goals of the women's ecology movement in the South as a model. She writes:

> *A science that does not respect nature's needs and a development that does not respect people's needs inevitably threatens survival. In their fight to survive the onslaughts of both, women have begun a struggle that challenges the most fundamental categories of Western patriarchy - its concepts of nature and women, and of science and development. Their ecological struggles are aimed simultaneously at liberating nature from ceaseless exploitation and themselves from marginalisation. They are creating a feminist ideology that transcends gender, and a political practice that is humanly inclusive; they are challenging patriarchy's ideological claim to universalism not with another universalising tendency, but with diversity; and they are challenging the dominant concept of power as violence with the alternative of non-violence as power.* (pp. xvii-xviii)

Viewed from this perspective, environmental education and environmental education policies need to reflect an alternative epistemology which values diverse ways

of knowing, identify with the people and communities they purport to serve, and respect community-based approaches to social change. Education for sustainable living is one such reconceptualisation of environmental education.

The Agenda for Professional Development

Despite the rising interest in environmental and development education in schools and the expectations of governments, several studies indicate cause for concern. They indicate that good practice in environmental and development education is not widespread, that few teachers appreciate the full range of objectives, resources and strategies in these fields, and that few have received either pre-service studies or undertaken in-service professional development in them. These concerns make it timely that comprehensive attention be given to the place of environmental and development education in pre-service and in-service teacher education programmes. The role of environmental education in teacher education is well developed in the international literature, chiefly as a result of the UNESCO-UNEP International Environmental Education Programme. There has been no comparable programmes for development education by UNESCO to date although this is changing with the formation of an integrated Environment and Population Education and Information for Human Development (EPD) programme. However, development education - like environmental education - is an important aspect of global education, an area in which there has been concerted work in recent years at least in the in-service education domain of professional development.

Much needs to be done at all levels to foster professional development opportunities to enhance the integration of development and environmental education, as the central role of the teacher in the diffusion of any innovation means that teacher education, at both the pre-service and the in-service levels, is vital.

Two quotations are commonly referenced in discussions of environmental education and teacher education. Both come from publications of the UNESCO-UNEP International Environmental Education Programme (IEEP), the process that seems to have done most work over the last decade to promote environmental education and teacher education. The first quotation states that teacher education is the 'priority of priorities' for action to improve the effectiveness of environmental education:

> *The role of environmental education in the care of the environment is crucial. What of the role of the teacher in environmental education ... ? Is it not, arguably, the priority of educational and, certainly, environmental priorities, as experience increasingly instructs us?* (UNESCO-UNEP, 1990, p.1)

Unfortunately, the second quotation laments an international pattern of neglect in addressing this priority:

> *Few, if any, teacher training programmes adequately prepare teachers to effectively achieve the goals of E.E. in their classrooms.* (Wilke, Peyton and Hungerford, 1987, p. 1)

However, few commentators pause to note that Hungerford and his colleagues were referring to an IEEP survey conducted in the mid-1970s in their report. This neglect on our part may stem from a belief that little has changed since the UNESCO survey two decades ago. Certainly, a range of national and international surveys in recent years reveals important deficiencies and a lack of co-ordination in the

provision of appropriate teacher education for environmental education in many parts of the world (see Bowman and Disinger, 1980; Williams, 1987; Ballantyne and Aston, 1990; Spork, 1992; UNESCO, 1993a, 1993b; Education Network for Environment and Development, n.d.). Data from one of these studies serves to summarise this point. The study by Spork (1992) was chosen because it relates the neglect of teacher education to its impact on the styles of environmental education being practised in classrooms.

This study involved an extensive and rigorously sampled survey of the teaching of environmental education by 300 primary school teachers in the Australian city of Brisbane. Spork focused her data collection and analysis on perceptions and practices of seven aspects of environmental education: teaching about natural systems, teaching about people-nature interactions, teaching skills to investigate the environment, teaching positive attitudes to the environment, teaching skills for investigating and clarifying environmental issues, teaching problem solving, and teaching through and for environmental action. The first four of these relate most closely with education in and *about* the environment whilst the last three are essential aspects of education *for* the environment (Fien, 1993b). When asked to report on their own practices in these seven aspects of environmental education, the teachers said that education *about* and *in* the environment were the most common approaches to environmental education they followed. Teaching information about the natural environment (98.2%) and positive attitudes to the environment (91.2%) were the most commonly reported aspects whilst teaching through investigating and clarifying environmental issues (28.1%) and through taking environmental action (19.7%) were the least common. This pattern of pedagogical practice occurred despite the fact that almost all the teachers in the survey rated all seven aspects of environmental education as 'important' or 'very important' in another part of the survey. The sharp drop-off in attention to the critical aspects of education *for* the environment means that the end purposes and full educational potential of environmental education are being lost - and that environmental education is not being implemented according to international or local guidelines in the schools in the city surveyed.

A major factor in the explanation of these patterns proved to be a lack of teacher education and professional development. When asked about their pre-service teacher education experiences, only 4.9% of the respondents said that they had undertaken any studies in environmental education, whilst over 85% claimed that they had received no training at all in environmental education through pre-service, inservice (only 6.6%) or post-graduate studies (3.1%).

This neglect of environmental education in teacher education occurs despite the fact that the 1977 Tbilisi Intergovernmental Conference on Environmental Education (at which the voting delegates were government and ministerial delegates not environmental education specialists) emphasised 'the establishment at the national level of a programme of action, with the aim, on the one hand of familiarising teachers and educational administrators and planners with different aspects and problems of the environment and on the other hand, giving them a basis of training which would enable them to incorporate environmental education effectively into their respective activities. This action should take the form of both pre-service and in-service training' (UNESCO, 1978, p. 24). Ten years later, the 'Tbilisi Plus 10' International Congress on Environmental Education and Training in Moscow in 1987 resolved that:

> *Teacher training is a key factor in the development of EE. The application of new environmental education programmes and proper use of teaching materials depends on suitably-trained personnel, as regards both the content and the methods specific to this form of education. Teachers well trained in the contents, methods and process of EE development can also play a crucial role in spreading the impact of EE at the national level, thus increasing the cost-effectiveness of the efforts made by member States to develop environmental education.... There is a need to identify the national objectives of the training of teachers and to develop plans for the training of teachers which can be implemented by the training authorities.*
> (UNESCO-UNEP, 1988, p. 12)

Much can and has been written about the reasons for the importance of teacher education in promoting the effectiveness of environmental education. However, two things are lacking in the literature: reports on research to seek explanations for the pattern of historical neglect and action, and reports on large-scale co-ordinated projects to address the problem. Tilbury (1993) has begun to trace reasons for the problem in the United Kingdom with her case studies of environmental education provision in three colleges of education. Her indications that factors such as the beliefs of lecturers, course priorities and structures, and the wishes of students may also help explain the neglect of environmental education in teacher education in those countries in which individual institutions choose their own curricula. However, it does not explain the neglect in those many parts of the world in which teacher education curricula are mandated or, at least, centrally determined. However, apart from survey reports on the impact of mandatory environmental education training in Wisconsin (e.g. Champeau, 1990) we are yet to see reports on large-scale co-ordinated projects to redress the problem. A start is being made, but research and published reports are generally descriptions of action at the level of the individual institution, and most focus on pre-service education and neglect in-service initiatives.

Fortunately, a number of projects to address this need are being developed in several parts of the world. Examples include the *Toolbox* in-service education project conducted by the National Consortium for Environmental Education and Training in the United States, the Environmental Education Initiative in Teacher Education in Europe (Brinkman and Scott, 1994), the UNESCO Learning for a Sustainable Environment – Innovations in Teacher Education Project in the Asia-Pacific region (UNESCO-ACEID and Griffith University, 1994, 1995), the Indian national in-service education programme conducted on a 'cluster - model' (and incorporating workshops delivered by satellite) by the Centre for Environmental Education in India (Ravindranath, 1993), and the Environmental and Development Education Project for Teacher Education in Australia (Fien, 1995) from which this manual was developed.

This manual is a contribution to this overall effort. Teacher educators and others charged with the professional development of teachers and environmental educators are invited to consider the arguments presented in this introduction; to examine the elaboration of the arguments in the three readings which follow; to critique, trial and evaluate the workshop modules; and to interact with members of the environmental education and development education communities in their countries in order to find ways of addressing the global crisis of development, environment and sustainability. Perhaps, then, as teacher educators, we will be able to stand with those who have refused to 'stand aloof from the decisions about how

and whether life will be lived in the twenty-first century' (Orr, 1992, p. 145) and will be able to say with Kirk (1977) that our work has contributed to the task of education as:

> *... the catalyst that not only saves the human race from extinction, but (which) also ... serves to unite all the people of the world in a common effort to find solutions to the perplexing and difficult problems that threaten life on the planet.* (p. 350)

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READING 1

PRINCIPLES OF SUSTAINABLE DEVELOPMENT - ACCORDING TO THE BRUNDTLAND COMMISSION

Source: Learning for a Sustainable Future (1993) *Developing a Co-operative Framework for Sustainable Development Education*, Learning for a Sustainable Future, Ottowa, pp. 16-17.

1. To Retrieve Growth

Economic growth must be stimulated, particularly in developing countries, while enhancing the environmental resource base. The industrialised countries can and must contribute to reviving world economic growth. There must be urgent international action to resolve the debt crisis; a substantial increase in the flow of development finance; and stabilisation in the foreign exchange earnings of low-income commodity exporters.

2. Change the Quality of Growth

Revived growth must be of a new kind in which sustainability, equity, social justice and security are firmly embedded as major social goals. A safe, environmentally-sound energy pathway is an indispensable component of this. Education, communication and international co-operation can all help to achieve those goals. In their reckoning of national wealth, development planners should take into account not only standard indicators, but also the state of natural resources. Better income distribution, reduced vulnerability to natural disaster and technological risks, improved health and preservation of cultural heritage all contribute to raising the quality of that growth.

3. To Integrate the Environment into Decision-Making

Environmental and economic goals can and must be made mutually reinforcing. Sustainability requires the enforcement of wider responsibilities for the impact of policy decisions. Those making such policy decisions must be responsible for the impact of those decisions upon the environmental resource capital of their nations. They must focus on the sources of environmental damage rather than the symptoms. The ability to anticipate and prevent environmental damage will require that ecological dimensions of policy be considered at the same time as economic, trade, energy, agricultural and other dimensions. They must be considered on the same agendas and in the same national and international institutions.

4. Ensure a Sustainable Level of Population

Population policies should be formulated and integrated with other economic and social development programmes: education, health care and the expansion of the livelihood base of the poor. Increased access to family planning services is itself a form of social development that allows couples, and women in particular, the right to self-determination.

5. Reorient Technology and Manage Risks

Technology creates risks, but it also offers the means to manage them. The capacity for technological innovation needs to be greatly enhanced in developing countries. The orientation of technological development in all countries must also be directed towards a greater regard for environmental factors. National and international institutional mechanisms are needed to assess potential impacts of new technologies before they are widely used. Similar arrangements are required for major interventions in natural systems such as river diversion or forest clearance. Liability for damages from unintended consequences must be strengthened and enforced. Greater public participation and free access to relevant information should be promoted in decision-making processes relative to environmental and developmental issues.

6. To Conserve and Enhance the Resource Base

Sustainability requires the conservation of environmental resources such as clean air, water, forests and soil; maintaining genetic diversity; and using energy, water and raw materials efficiently. Improvements in the efficiency of production must be accelerated to reduce per capita consumption of natural resources and encourage a shift to non-polluting products and technologies. All countries are called upon to prevent environmental pollution by rigorously enforcing environmental regulations, promoting low-waste technologies and anticipating the impact of new products, technologies and wastes.

7. To Reform International Economic Relations

Long-term sustainable growth will require far-reaching changes to produce trade, capital and technology flows that are more equitable and better synchronised to environmental imperatives. Fundamental improvements in market access, technology transfer and international finance are necessary to help developing countries widen their opportunities by diversifying their economic and trade bases and building their self-reliance.

8. To Strengthen International Co-operation

The introduction of an environmental dimension injects an additional element of urgency and mutual self-interest since a failure to address the interaction between resource degradation and rising poverty will spill-over and become a global ecological problem. Higher priorities must be assigned to environmental monitoring, assessment, research and development, and to resource management in all fields of international development. This requires a high level of commitment by all countries to the satisfactory working of multilateral institutions; to the making and the observance of international rules in fields such as trade and investment; and to constructive dialogue on the many issues where national interests do not immediately coincide, but rather require negotiation to be reconciled. It requires also a recognition of the essential importance of international peace and security. New dimensions of multilateralism are essential to sustainable human progress.

READING 2

AGENDA 21 .... TOWARDS SUSTAINABLE DEVELOPMENT

Source: Learning for a Sustainable Future (1993) *Developing a Co-operative Framework for Sustainable Development Education*, Learning for a Sustainable Future, Ottawa, pp. 10-15.

The principal product of the United Nations Conference on Environment and Development is Agenda 21. This Agenda is not a binding convention, such as the one on climate, it is rather the expression of the agreement on what needs to be done about the continuing deterioration of the ecosystems, the worsening of poverty, hunger, ill health and illiteracy.

Agenda 21 responds to the understanding that the Earth cannot much longer sustain a human species divided into rich and poor. It describes and prices out the actions necessary to bring human numbers and appetites into adjustment by the middle of the 21st century, using the finite resources of the Earth. The following is a summarised version of the 40 chapters included in Agenda 21:

Section 1

Social and Economic Dimensions

Chapter 2 - Accelerating Sustainable Development

Agenda 21 calls upon the global partnership to provide a dynamic and growing world economy in support of sustainable development in poor countries. An open, equitable, secure, non-discriminatory and predictable multilateral trading system, in which the commodity exports of developing countries can find markets at fair prices free of tariff and non-tariff barriers, is the first requisite of sustainable development. Environmental protection measures must not be allowed to restrain trade, and vice versa, with such vexed questions to be settled each on its own terms.

Chapter 3 - Combating Poverty

The long term objective of enabling all people to achieve sustainable livelihoods should provide an integrating factor that allows policies to address issues of development, sustainable resource management, and poverty eradication simultaneously. This objective is to be sought by improving the access of the poor to education and health care, to safe water and sanitation, and to resources, especially land, by empowering the disadvantaged, especially women, youth and indigenous peoples.

Chapter 4 - Changing Consumption Patterns

The inequitable distribution of income and wealth results in conspicuous unsustainable consumption. Social research and policy should bring forward new concepts of status and lifestyle which are less dependent on the Earth's finite resources and more in harmony with its carrying capacity. Greater efficiency in the use of energy and resources must be sought through new technology and new social values.

Chapter 5 - Demographic Dynamics and Sustainability

Rapid population growth places severe stress on the life-supporting capacities of the planet. Agenda 21 urges governments to develop and implement population policies integral with their economic development programs. Health services should include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible services, as appropriate, for the responsible planning of family size. The objective is to stabilise the world population at a sustainable number by the end of the century.

Chapter 6 - Protecting and Promoting Human Health

Within the overall strategy to achieve health for all by the year 2000, health service coverage should be achieved for population groups in the greatest need, particularly those living in rural areas. The preventive measures suggested included reckoning with urban health hazards and risks from environmental pollution.

Chapter 7 - Sustainable Human Settlements

In industrialised countries, the consumption patterns of cities are putting severe stress on the global ecosystem, while settlements in the developing countries need more raw materials, energy and economic development simply to overcome basic economic and social problems. Investment is needed to supply the missing urban infrastructure. Rational land-use planning must reduce the irreversible environmental devastation of urban sprawl.

Chapter 8 - Integrating Environment and Development

Agenda 21 calls on nations and corporate enterprises to integrate environmental protection, degradation and restoration costs in decision-making at the outset - to mount, without delay, the research necessary to reckon such costs and to develop protocols bringing these considerations into procedures at all levels of decision-making.

Section II

Resources for Development

Chapter 9 - Protecting the Atmosphere

Constraint and efficiency in energy production and consumption, development of renewable energy sources, and promotion of mass transit technology and access for developing countries is needed. Conservation and expansion of all sinks for greenhouse gases is extolled and transboundary pollution is subject to international controls.

Chapter 10 - Planning and Management of Land-Use

An increasingly populated world has been learning to bring the competing uses of finite land resources under zoning and planning by public agencies. We must now learn to integrate environmental considerations into decisions that may irreversibly upset ecosystems.

Chapter 11 - Combating Deforestation

There is a need for concerted international research and conservation efforts to control harvesting of forests and uncontrolled degradation and conversion to other types of land use; to develop the values of standing forests under sustained cultivation by indigenous technologies and agroforestry, and to expand the shrunken world-forest cover.

Chapter 12 - Combating Desertification

Agenda 21 calls for intensive study of the process in its relation to world climate change to improve forecasting, study of natural vegetation succession to support large-scale revegetation and afforestation, checking and reversal of erosion, and small and grand scale measures. It is also recommended that preventive measures be applied to critical zones facing desertification. The General Assembly, in its current sessions, is urged to initiate negotiation of an international convention to combat desertification for signature in 1994.

Chapter 13 - Mountain Development

Mountains are important for their role in the modulation of climate, in retarding run off and in the governing of the water supply. This chapter calls for study, protection, and restoration of these fragile ecosystems and assistance to populations in regions suffering degradation.

Chapter 14 - Agriculture and Rural Development

Traditional agriculture can no longer sustain the population in crowded villages of the pre-industrial world. New technologies must be introduced into and adapted to lands in order to increase development in the rural area.

Chapter 15 - Conservation and Biodiversity

Our planet's essential goods and services depend upon the variety and variability of genes, species, populations and ecosystems. The Convention on Biodiversity, as well as Agenda 21, recognise the sovereignty of nations over the genetic resources of their ecosystems and the right of indigenous people to participate in exploitation by biotechnology of the genetic resources they have husbanded. National strategies on conservation and biodiversity should be implemented.

Chapter 16 - Sustainable Biotechnology

The comprehension and control of life processes acquired in the present half century gives the human species unprecedented means to increase the availability of food and renewable raw materials to improve human health and to enhance the protection of the environment. With science and technology so largely in the possession of developed counties, Agenda 21 calls for the transfer of biotechnology to the developing countries and the creation of the infrastructure of human capacity and institutions to put it to work here.

Chapter 17 - Protection of the Oceans

Exploitation and abuse of the oceans now places this continuing essential resource of human existence in peril. This Chapter sets out goals and programs in order to integrate the management and sustainable development of coastal areas, including exclusive economic zones. It also addresses critical uncertainties for the management of the marine environment and for the climate change.

Chapter 18 - Water, its Protection and its Management

Water is the primary necessity required to sustain life. The contamination of water endangers health. Agenda 21 sets out measures, from the development of long-range weather and climate forecasting to the clean-up of the most obvious sources of pollution, to secure a supply of fresh water for the next doubling of human population.

Chapter 19 - Management of Toxic Chemicals

The industrial revolution has brought no less than 100,000 man-made chemicals into the world commerce. Not enough is known about the long or even the immediate or short-term effects of exposure of humans and the environment to these chemicals. Agenda 21 seeks such objectives as the full evaluation of 500 chemicals before the year 2000 and has the willing co-operation of all concerned.

Chapter 20 - Hazardous Wastes

Certain of the 100,000 man-made chemicals make a hazardous contribution to the 2 kilograms of solid waste per capita per day generated in the industrial countries. Crowding of the land-fills in those countries has started up a dubious new branch of international trade. Developing countries have come under pressure to accept these unpleasant imports. Agenda 21 seeks international support in restraining trade and for containing the hazardous cargoes in safe sinks.

Chapter 21 - Solid Wastes and Sewage

Apart from its hazardous content, the sheer volume of solid waste generated by industrial civilisation calls for modes of control and disposal that reduce the burden it lays upon the environment. The minimising and recycling of waste are urged as strategies to make it possible to arrive, finally at environmentally-sound waste treatment and disposal. 'Life cycle' management of the flow of material into and out of manufacturing and use is encouraged.

Chapter 22 - Radioactive Wastes

Nuclear power production presently generates 200,000 tons of low and intermediate-level radioactive waste and 10,000 tons of high-level waste. Mainly a problem for the developed countries, its management calls for stricter observance and enforcement of the Code of Practice on the Transboundary Movements of Radioactive Waste, propounded by the International Atomic Energy Agency and giving teeth to the London Dumping Convention that now calls for voluntary restraint of ocean dumping.

Section III

Strengthening Major Groups

Chapter 23 - Preamble

The commitment and involvement of all social groups will be critical to the effective implementation of the objectives, policies, and mechanisms agreed to by Governments in all program areas of Agenda 21.

Chapter 24 - Women

In the poor countries, women bear the cruellest burdens of poverty, including the hardest and most lowly tasks, the pain of childbirth and the anguish of infant mortality. They suffer further the humiliation of status that accords with the meanness of their existence. Governments, principally male, are urged to face the status question, to give girls equal access to education, to reduce the workloads of girls and women, to make health-care systems responsive to female needs, to open employment careers to women and to bring women into full participation in social, cultural and public life. Without such participation, development is unsustainable.

Chapter 25 - Children and Youth

Governments are urged, by the year 2000, to ensure that 50% of their youth, both male and female, have access to secondary education or the equivalent of a professional education. This formation should include basic sensitisation on matters related to the environment and sustainable development. On the other side of the coin, they are urged to combat abuse of the rights of youth, especially females, endemic in certain cultures.

Chapter 26 - Indigenous People

Indigenous people have much to teach the industrial world about sustainable development. Agenda 21 urges their enrolment in full global partnership, beginning with measures to protect their rights and conserve their patrimony.

Chapter 27 - Non-Governmental Organisations

Non-governmental organisations in developed countries are reinforced by counterparts in developing countries. Development is finding its place on their agendas alongside the environment. Human compassion of the largely young militants is fortified by their increasing sophistication in the economics and politics of underdevelopment. Agenda 21 urges governments to accept the inevitable and to work constructively with this new opposition, even against the impression, conveyed at times by its militancy, of uncertain loyalty.

Chapter 28 - Local Authorities

Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, most local authorities should, by 1996, have undertaken to promote a consensus in their local population on a 'local Agenda 21'. By 1993, the international community should have initiated increasing co-operation among local authorities. By 1994, such co-operation should be fathering full momentum. At all times, local authorities should be inviting women and youth into full participation in the decision-making, planning and implementation process.

Chapter 29 - Workers and Trade Unions

Measures of sustainable development must necessarily impinge upon the workplace and on the nature of occupations. For their own protection and in promotion of socially responsible economic development, workers, through their elected representatives, must have a voice. Relevant organisations await ratification.

Chapter 30 - Business and Industry

Through the Business Council on Sustainable Development, a number of enterprises have taken the lead in demonstrating life-cycle accounting and in reflecting environmental costs of their input and production and of the

uses, recycling and disposal of their products. While they looked to market compulsions and incentives to close most of the distance to sustainable development, they accept the necessity for regulatory measures by the governments to speed the way.

Chapter 31 - Science and Technology

The Montreal Ozone-Layer Convention and the Climate-Change Convention signed at Rio both argue for closer communication and understanding between the scientific and technological community and the decision-makers who determine public policy. A code of ethical practice agreed upon by scientists and recognised by society as a whole would facilitate the monitoring of their accountability.

Chapter 32 - Farmers

Farmers are stewards of sustainable development, directly responsible for one third of the land surface of the Earth. They require economic and technical assistance that will encourage them in self-sufficient, low-input and low-energy agricultural practices. The market should adopt pricing mechanisms that internalise environmental costs. Women, who do much of the world's farming, should have access to tenure and use of land, to credits, and to technology.

Section IV

Means of Implementation

Chapter 33 - Financial Resources and Mechanisms

Eradication of poverty is essential in order to meet national and global sustainability objectives. The cost of inaction could outweigh the financial cost of implementing Agenda 21. The huge sustainable development programs of Agenda 21 will require the provision of substantial new and additional financial resources to developing countries. The initial phase will be accelerated by substantial early commitments of concessional funding. Further, developed countries reaffirmed their commitments to reach the accepted United Nations target of 0.7% of GNP for concessional funding as soon as possible.

Chapter 34 - Transfer of Technology

Developing countries would be assisted in gaining access to technology and know-how in the public domain and to that protected by intellectual property rights, as well, taking into account developments in the process of negotiating an international code of conduct on the transfer of technology proceeding under the United Nations Agreement on Tariffs and Trade. To enhance access of developing countries to environmentally-sound technology, a collaborative network of laboratories is to be established.

Chapter 35 - Science for Sustainable Development

The sciences link fundamental understanding of the Earth system to the development of strategies that build upon its continued health functioning. In the face of threats of irreversible environmental damage, lack of full scientific understanding should not be an excuse for postponing actions which are justified in their own right.

Chapter 36 - Education and Public Awareness

Because sustainable development must ultimately enlist everyone, access to education must be hastened for all children; adult illiteracy must be reduced to half its 1990 level, and the curriculum must incorporate environmental and developmental learning.

Chapter 37 - Capacity Building

Building endogenous capacity to implement Agenda 21 requires the strengthening of human, scientific, technical, administrative, institutional and financial capacities of a country in order to deal with environmental problems on a long-term basis. Agenda 21 will require the efforts of the countries themselves in partnership with relevant United Nations organisations and developed countries.

Chapter 38 - International Institutions

Agenda 21 proposes to add a Commission on Sustainable Development to monitor its implementation which would report to the General Assembly through ECOSOC.

Chapter 39 - Legal Instruments and Mechanisms

Implementation of Agenda 21 will require further development and strengthening of international law. Existing international agreements, having been negotiated without adequate participation and contribution of developing countries, need to be reviewed. Sustainable development will require the extension of international law into new realms of human activity.

Chapter 40 - Bridging the Data Gap

Internationalisation of environmental costs and amortisation of indicators of sustainability all require not only new data but also new thinking. The Global Environmental Monitoring System and Global Resource Information Database of the UN Environment Program represent a first step towards this end.

READING 3

FOUR EDUCATIONS IN ONE

Source: Extracts from Greig, S., Selby, D. and Pike, G. (1987) *Earthrights: Education as if People Really Mattered*, WWF/ Kogan Page, London, pp. 23-37.

Development education, environmental education, human rights education and peace education are four recent initiatives that have addressed the above – and related – questions. Each initiative has tried to influence the education system by setting up teachers' networks, publicising examples of noteworthy practice and making available good classroom resources. In response to this proliferation of 'educations', there have also been important developments aimed at clustering them all under a more inclusive title such as 'world studies' or 'global education'. Such developments recognise the difficulty even the committed teacher has in coming to terms with and implementing so many 'educations', however important she considers each to be. They also recognise that, whilst each 'education' has its own distinctive features and starting points, their concerns are finally mutual and overlapping. Questions concerning the development of human communities and environmental conservation cannot be separated on the world stage, or in the classroom.

Development education

Development education grew out of the mounting concern of charitable organisations, the churches and the United Nations over 'Third World' poverty. This led, particularly in the 1960s and early 1970s, to courses and course units which focussed exclusively upon the plight of chosen 'Third World' countries. From these origins thinking has progressively become much more sophisticated and diversified so that the following perspectives and insights are now all strongly represented in the field:

- ☐ to understand the level of development in a particular country, the impact of global economic and political systems has also to be studied;
- ☐ development education is about understanding development processes within and between all countries, rich and poor;
- ☐ what is appropriate development in one context is not necessarily appropriate in another;
- ☐ those in the West have much to learn from non-Western perspectives on development;
- ☐ the 'Third World' is not just a term to describe economically poor nations, but also encompasses areas and groups that have been marginalised by the workings of economic and political systems (e.g. women, the aged, the homeless, the unemployed, ethnic minorities, indigenous peoples, and poor, remote or uninfluential parts of wealthy countries).

The influential Brandt Report, *North–South* (1980), with its emphasis upon the interdependent nature of the contemporary world, did much to help quicken the shift from a narrow to a broad-focus conception of development education. The statement drawn up at the second national conference of the National Association of Development Education Centres (see this page) provides a succinct statement of that broad focus and pinpoints the importance of promoting knowledge, skills and attitudes which will enable individuals better to influence their world.

Environmental education

In the United Kingdom, the term 'environmental education' was first coined in 1965. It, too, has both a narrow and broad focus. Teachers at the narrow focus have tended to concentrate their teaching upon the local environment, natural and human-made, or upon the purely biological or geographical aspects of environmental study. The call for a much more holistic and biopolitical approach was made at the U.N. Intergovernmental Conference on Environmental Education in Tbilisi, U.S.S.R., in 1977 (see this page) and, again, when the World Wildlife Fund, the United Nations Environment Programme and the International Union for the Conservation of Nature and Natural Resources jointly launched the *World Conservation Strategy* in 1980. The *Strategy*, which appeared hard on the heels of the Brandt Report, underlined the interdependent nature of all components of the biosphere, including human communities, and thus directly linked the future of the planet's life-support systems to human behaviour and development decisions. 'A new ethic, embracing plants and animals as well as people is required for human societies to live in harmony with the natural world on which they depend for survival and well-being,' the *Strategy* urged. 'The long term task of environmental education is to foster or reinforce attitudes and behaviour compatible with this new ethic.'

What the Brandt Report did for development education, the *World Conservation Strategy* has done for environmental education. In the 1980s teaching and learning about the environment is increasingly marked by:

- ☐ a recognition that the local environment is caught up in the global ecosystem;
- ☐ an awareness that human and natural systems interact in myriad ways and that there is no part of human activity which does not have a bearing on the environment and vice versa;
- ☐ a dawning acknowledgement of how much we can learn from other cultures and, perhaps especially, indigeneous peoples, about how to relate to the environment;
- ☐ an emphasis on the development of environment-friendly values, attitudes and skills (including, very importantly, those skills appropriate to influencing public opinion and political decision making).

Human rights education

Human rights education has long enjoyed high-level support from international organisations, such as the United Nations and the Council of Europe, but only recently has that support begun to be translated into good practice undertaken by real teachers with real students in real schools.

The teaching of human rights in the United Kingdom has often adopted a narrow focus. *Civil and political rights* (i.e. individual freedoms such as freedom of speech and freedom of movement) have been the main object of study with relatively little attention given to *social and economic rights* (i.e. those that ensure material and bodily well-being, such as the right to food and shelter). There has also been a rather uncritical acceptance of Western individualistic notions of rights and some reluctance to stray beyond those laid down in key international documents such as the *Universal Declaration of Human Rights* (1948). Those teaching to a narrow rights focus have insufficiently recognised that *new rights, reflecting new human preoccupations, need constantly to be identified*. Broad focus rights educators, on the other hand, have shown a preparedness to broaden their teaching to include non-Western concepts of rights and new rights issues that have emerged subsequent to the major international documents, such as racism, sexism, the right to development and the rights implications of environmental abuse.

Peace education

The original 1960s' focus of concern of peace education – with the horrors of the Second World War not long past and the arms race in full swing – was studying war and disarmament. Teachers also looked for ways in which schools could help create more positive attitudes to the peoples of other nations and so foster international understanding. Since the 1960s, the focus has broadened to include not only *negative peace* (i.e. absence of war) but also *positive peace* (i.e. ways of creating more just structures in and between societies). A society or world characterised by injustice, oppression and exploitation may seem superficially peaceful in the absence of actual physical violence but a 'masked violence is constantly done to the rights and lives of human beings'[27]. Broad-focus peace educators in the 1980s would, therefore, include questions of violence/non-violence, poverty/economic welfare and injustice/justice within their working definition. They would also embrace the study of conflict, conflict avoidance and resolution between individuals, groups and nations. Finally, they would want to explore the question of humanity's relationship with the environment and encourage their students to consider whether and in what ways we need to modify our behaviours, expectations and values so as to bring greater harmony (peacefulness) to that relationship.

Four educations? One education?

Interestingly, the four 'educations' share relatively few and sometimes no mutual or overlapping concerns at their narrow focus (see fig. 1). A purely local or biological approach to environmental education, for instance, has little or nothing in common with studying poverty in the 'Third World' (narrow focus development education) or with studying war and disarmament (narrow focus peace education). At their broad focus, however, there is an extremely marked degree of convergence between the four 'educations' to the point where it becomes difficult to conceive of them as discrete fields. Why is this?

1. *Those working at the broad focus have come to recognize that their respective principal concepts – development, environment, human rights and peace – are complementary, interdependent and mutually illuminating.*

For instance:

- ☐ development decisions for human communities cannot disregard their environmental impact without, in the short or long term, jeopardising human development;
- ☐ environmental conservation is not contrary to development but an essential consideration if we are to work to create human lifestyles that are sustainable;
- ☐ development is essentially about the realisation of material and non-material human rights just as underdevelopment or distorted development and their effects – malnutrition, hunger, disease – involve rights denials;
- ☐ making choices between different types of development and different environmental strategies will, almost inevitably, involve a particular interpretation and prioritisation of rights;
- ☐ making wrong or risky choices about the environment will leave a sorry heritage for future generations – e.g. less productive land, less diversity of plant and animal life, less room for manoeuvre, fewer options – and thus involves rights questions of profound importance;
- ☐ global conflict continues to impede massively our ability to meet the development needs of the whole human community; it also has devastating environmental effects.

2. *The thinking of those at the broad focus of each field is increasingly marked by a shift away from a compartmentalised view of reality to an acceptance of the interconnectedness of all things and what has been called the 'permeability of boundaries'.*

For instance:

- ☐ the local, national and global are viewed as different layers in a dynamic world system in which nothing finally makes sense save in relationship to everything else – the local, for instance, is in the global, the global in the local;
- ☐ personal change and planetary change are, accordingly, held to be deeply interwoven processes;
- ☐ past, present and future are conceived as being in dynamic relationship – real learning therefore involves looking to the future as well as at the present and past since our view of the future infuses how we see everything else.

A common acknowledgement of the 'permeability of boundaries' also explains why those at the broad focus:

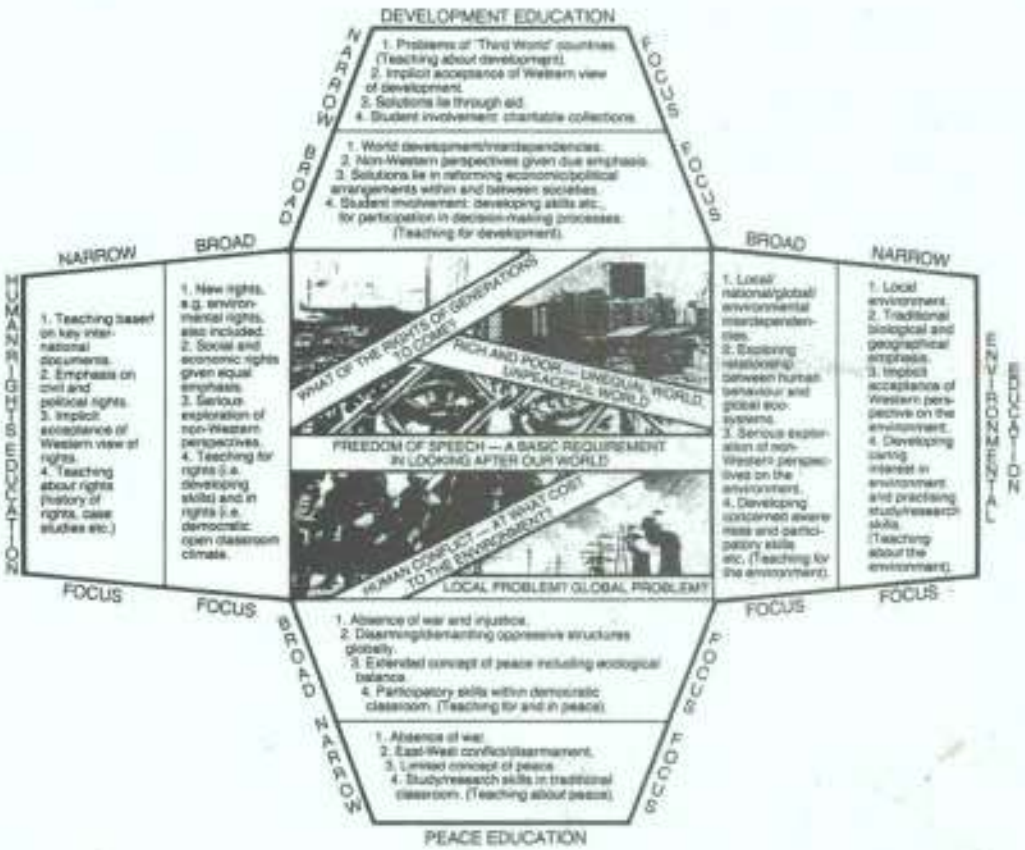
- ☐ emphasise the importance of interdisciplinary approaches and call for the infusion of the whole school curriculum with a global perspective;
- ☐ seek a more thoroughgoing integration of school and community through greater involvement of the community in school life and through an expansion of in-community learning opportunities;
- ☐ regard education as a lifelong process infusing every aspect of human activity rather than as a part of life that ends with leaving school, college or university.

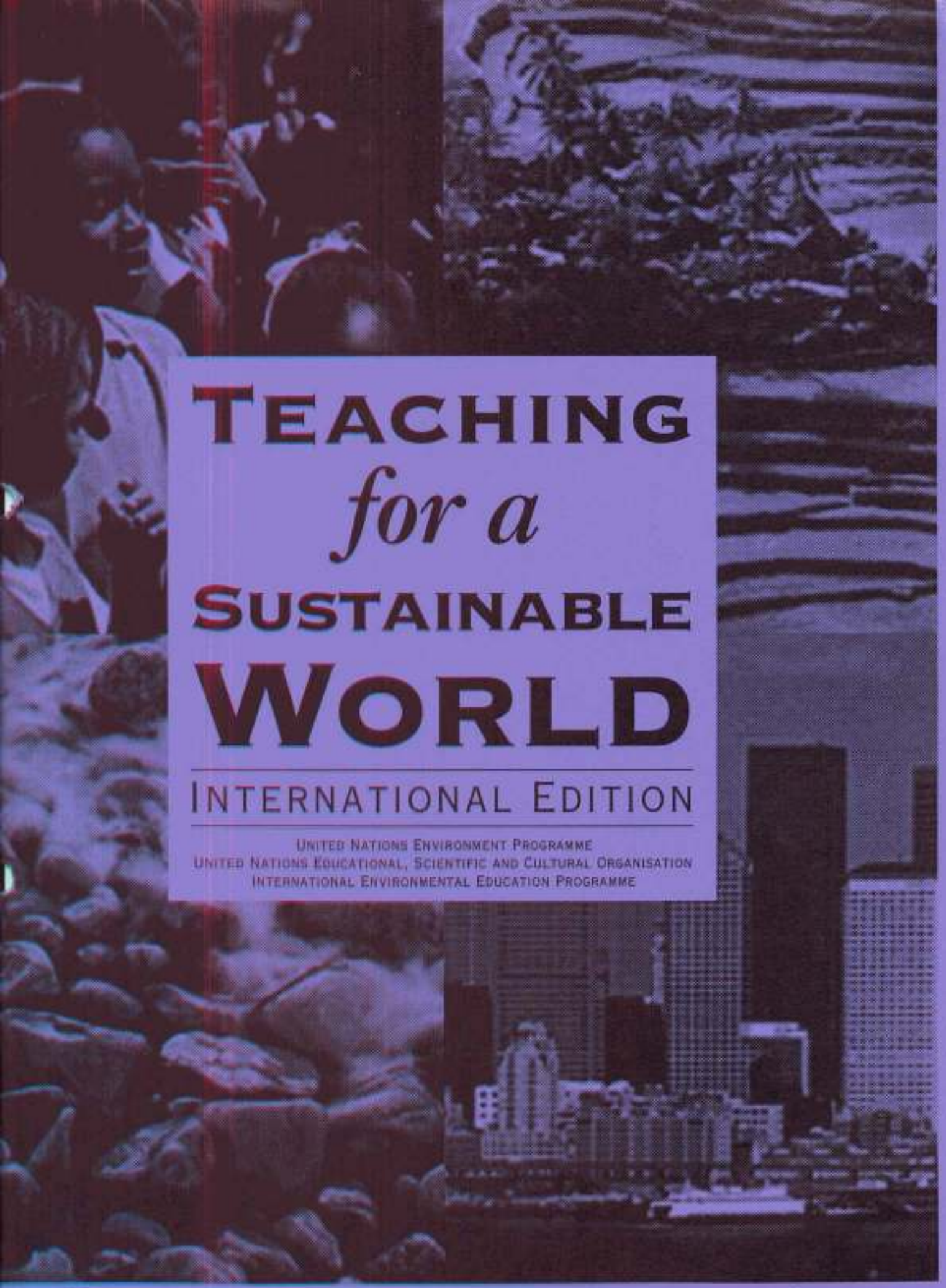
3. *The broad focus position within each of the four 'educations' involves fostering the attitudes and practising the skills necessary for active participation in the political process. Such attitudes and skills are empowering and vital if students are to become subjects rather than objects in their own history.*

This is why such great emphasis is laid upon participatory learning and upon creating a humane, open and democratic classroom marked by high levels of self and group esteem, co-operation, debate, discussion and negotiation (see pages 51–57).

A thought-provoking way to think about the four 'educations' is to see their relationship as *holographic*. A hologram is a three-dimensional 'photograph' created by laser technology. Amongst its most astonishing properties is that *the part contains the code of the whole*. Hence, a hologram of a face, if broken, can be reconstructed from, say, the hologram of the nose. Similarly, a maturer and more comprehensive understanding of, for instance, environmental education will, whatever the nature of one's initial interest, inevitably lead to questions of development, rights, culture, race, gender and peaceful and conflictual relationships. *The field carries the code of the whole; it can be conceived of as both part of the whole and the whole.*

Figure 1





MODULE 1

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP

AusAID

A View of a Sustainable World

JOHN FIEN
GRIFFITH UNIVERSITY
AUSTRALIA

INTRODUCTION

The development of an industrialising global society has been made possible through the availability of abundant natural resources and human labour. Unfortunately, the way people have managed the world's resources to date is threatening the natural systems on which social and economic development depend. Consequently, individuals, governments, companies and organisations are attempting to develop strategies based on the principles of ecologically sustainable and socially just development to ensure that the natural environment will be able to continue to support future generations.

The workshop introduces some of the major themes that are the focus of this manual. It provides an introduction to the nature and scope of each of these themes as a foundation for more in-depth studies in later modules. It also highlights the inter-dependence of these themes and how our daily lives, as inhabitants of the world, are related to these social, economic and environmental processes. The workshop demonstrates that changes to the way resources are used are possible, and that social and environmental problems can be solved. The workshop also highlights the role being played by the UNESCO-UNEP International Environmental Education Programme in this process.

OUTCOMES

During this workshop participants will:

- develop an understanding of the range of social and environmental questions, issues and problems facing the world's people;
- develop an understanding of the relationship between different types of social and environmental questions, issues and problems;

- develop skills for analysing the nature, causes and effects of social and environmental questions, issues and problems;
- improve their capacities to respond positively to the challenge of making a personal contribution to solving social and environmental questions, issues and problems;
- recognise that environmental education can play a key role in empowering people to work for a sustainable world; and
- strengthen their competencies for dealing with values-laden issues in education.

WORKSHOP OUTLINE

1. A View of the World

This activity provides a brief introduction and a rationale for the workshop.

2. Exploring the Links

Participants are introduced to the inter-connectedness of social, economic and environmental themes through a group activity called 'Woolly Webs'. This activity concludes with a mini-lecture identifying the extent, effects and costs of the social, economic and environmental questions, issues and problems which the process of sustainable development seeks to address.

3. Strategic Questioning

Participants work individually, and then in pairs, to analyse the impact in their community of one of the themes from Activity 2. The set of six types of Strategic Questions developed by Peavy (1992) are presented in a mini-lecture, and then used by participants to develop the critical thinking skills needed to understand social and environmental questions, issues and problems, and to act on this understanding.

4. Approaching Environmental Issues in the Classroom

This activity explores the range of considerations necessary for teaching about controversial issues in the classroom so that teachers can operate in a professional and ethically sound way. The focus is a set of ten principles which provide guidelines on ways of adopting a positive and optimistic approach to teaching about the values-laden issues.

5. The UNESCO-UNEP International Environmental Education Programme

The workshop concludes with a review of the activities of the UNESCO-UNEP International Environmental Education Programme in supporting innovative ways of promoting environmental education.

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Spaceship Earth

OHT 2: An Intergalactic Report

OHT 3: Ten Themes

RESOURCES

Resource 1: Ten Social and Environmental Themes

Resource 2: Strategic Questioning: What is It?

Resource 3: Strategic Questions

Resource 4: Principles for Teaching about Environmental Issues

Resource 5: The UNESCO-UNEP International Environmental Education Programme (IEEP): A Global Enterprise

B) TO OBTAIN

Activity 2: Ten coloured balls of wool
Ten coloured pens (same colours as wool)
Ten sheets of chart paper
Group name labels for each participant

ADDITIONAL READING

Brown, L.R. *et al.* (1992) *State of the World 1992*, World Watch Institute, Washington, DC.

Corson, W. H. (1990) *The Global Ecology Handbook*, Beacon Press, Boston.

Fien, J. (1988) *Education for the Australian Environment*. Bicentennial Australian Studies Schools Project Bulletin 6, Curriculum Development Centre, Canberra.

Miller, G. Tyler (1991) *Environmental Science: Sustaining the Earth*, 3rd ed., Wadsworth Pub. Co., Belmont, CA.

Miller, G. Tyler (1994) *Living in the Environment*, 8th ed., Wadsworth Pub. Co., Belmont, CA.

Peavy, F. (1994) *By Life's Grace: Musings on the Essence of Social Change*, New Society Publishers, Philadelphia, pp 86-111.

Pennock, M. and Bardwell, L. (1994) *Approaching Environmental Issues in the Classroom*. Environmental Education Toolbox Workshop Resource Manual, National Centre for Environmental Education and Training, University of Michigan.

Selby, D. and Pike, G. (1987) *Global Teacher: Global Learner*, Hodder and Stoughton, London.

Smith, P.M. and Warr, K. (eds.) (1991) *Global Environmental Issues*, Hodder and Stoughton for the Open University, London.

Stradling, R., Noctor, M. and Baines, B. (1984) *Teaching Controversial Issues*, Edward Arnold, London.

World Resources Institute (1992) *World Resources 1992-93 - Towards Sustainable Development*, Oxford University Press, New York.

— Managing Planet Earth, Special Issue of *Scientific American*, September 1989.

1. A View of the World

- Introduce the workshop with OHT 1 and OHT 2. OHT 1 is a quotation from Anne and Paul Ehrlich's book called *Earth*. In this quotation, they compare 'Spaceship Earth' to an aeroplane which had missed much of its maintenance programme. Display and read OHT 1, and ask participants to list some of the environmental problems that they have experienced. Explain that Spaceship Earth not only displays a lot of problems in its physical systems; it also displays many problems with the social systems for its 'passengers'.
- Display OHT 2 and ask several participants to take turns to read the dot points aloud. OHT 2 is a 'simulated' computer printout of an intergalactic report on life on Spaceship Earth. Explain that any galactic visitor to earth could not help but observe that conditions for most of the five billion inhabitants on Planet Earth are far from good. The computer printouts from an intergalactic report on earth indicate that total global economic production is huge but that much of it is used very unwisely and selfishly. While the minority of the world's citizens in the first class compartment of Spaceship Earth are doing very nicely indeed, the vast majority of passengers live in conditions of great poverty in the overcrowded third class compartment. They are there through little fault of their own. Indeed, increasingly, it is their labour and resources and the enforced necessity of accepting noxious industries and wastes from the first class compartment that maintains the conditions of luxury for the first class passengers.
- Indicate to participants that the workshop is designed to help them see the connections between the natural and social systems of Spaceship Earth, to appreciate their personal role in helping such solutions, and the need to approach teaching about environment and development issues sensitively.

2. Exploring the Links

Introduction

This activity introduces participants to the connections between many of the major social and environmental problems facing people in the world today. It also introduces many of the themes covered in this manual. The activity teaches that co-operation is essential if a comprehensive approach to environmental problem solving is to take place.

The group should be split into ten smaller groups for this activity. Each one is allocated one of ten topic areas which relate to the themes in this manual. Each group shares its existing knowledge of its topic first. The activity then has participants working together to negotiate the links that exist between each topic area via an inter-group discussion process called 'Woolly Web' (adapted from Selby and Pike, 1987). These links are then discussed. The activity concludes with a mini-lecture that provides a brief overview of the extent, effects and costs of the various environmental questions, issues and problems that are the subject of this manual.

Preparation

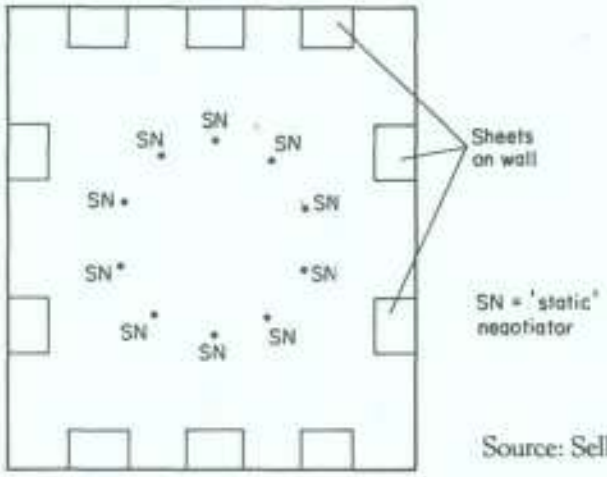
- Each of the following themes should be written onto separate pieces of chart paper as a page heading:
  - Climate Change
  - Fresh Water

- Oceans and Coastal Areas
- Biological Diversity
- Environmental Effects of Industry
- Women and Poverty
- Quality of Life
- Environmental Education
- The Peace Dividend
- Environmental Impact Assessment

- Facilitators should familiarise themselves with the scope and importance of these themes by reading Resource 1 (which will be used in the mini-lecture at the end of the activity).
- Obtain ten different coloured balls of wool and ten pens/crayons which approximately match these colours. Facilitators will also need enough labels for each person in the group.
- A large cleared room is necessary.

Running the Activity

- Put the ten pieces of butcher's paper up on the wall so that they surround the room (see diagram below).



Source: Selby and Pike (1987)

- Explain that this activity focuses on ten social and environmental themes. Display the ten themes on OHT 3. Split participants into ten groups with a minimum of three people in each one. Each group should be given one of the topics and asked to record on their note paper (do not use the prepared chart paper yet) as much as they know about the topic. They should include things such as the extent, causes and solutions to the problems that are encompassed by their topics.

  Each person in the group should put on a label that has the name of the group theme written on it. Then ask each group to consider how its theme is related to any of the other themes - possibly as a cause and/or effect.
- For the next part of the activity, each group chooses one person to act as their 'static negotiator' (SN). The role of the SN is to stay with the chart paper and negotiate links between the other themes with the 'mobile negotiators' (see below). The ten SNs should stand beside their piece of chart paper, forming a large circle approximately 5-6 metres across (see diagram above).

- Each SN then ties a coloured ball of wool around his/her waist and holds on to the ball.
- The other two members of each group become 'mobile negotiators' (MN). Their task is to move around the circle (with the ball of wool and coloured pen that represents their own topic) and liaise with the other nine SNs to determine whether a link exists between their two themes. If a link is negotiated, then the MN's theme and the reasons why there is a link between the two themes should be written on the chart paper.
- Once the link has been established by both groups, the MN loops the ball of wool around the appropriate SN's waist. The wool is then taken back to the original SN and looped around him/her as well. In this way a physical link is made between the two themes.
- The process is repeated as many times as possible. Make sure that the wool is kept taut at all times.
- When all the possible links have been made, the SNs sit down where they are, keeping the wool taut. The MNs sit beside or behind them. This end result is called a 'Woolly Web'.

Debriefing:

- Discuss the connections that were made by the groups. Questions for discussion might include:
  - How many connections/links did each group make?
  - Were some links more important than others?
  - Which groups decided that links did not exist between them and why?
  - How do these links affect the way in which social and environmental problems are tackled and addressed?
  - Are there links to other themes that are not covered by this activity? What are they?
- Conclude this activity with a 10-15 minute mini-lecture outlining the extent, effects and costs of the environmental questions, issues and problems to be addressed in this manual. Use Resource 1 and OHT 3.

3. Strategic Questioning

Introduction

- In this activity, participants are invited to explore one of the themes in greater depth by sharing their knowledge and experiences. Participants first listen to a mini-lecture on the topic of 'Strategic Questioning', and then work in pairs to use the process of Strategic Questioning to begin to develop the critical skills needed to understand environmental questions, issues and problems.
- To become familiar with the techniques, it could be useful to rehearse the Strategic Questioning process with a friend or colleague before using it in a workshop.
- Plan to conduct this activity in a comfortable setting so that the environment may promote deeper reflection/interaction.

Running the Activity

- Present a 5-10 minute mini-lecture on Strategic Questioning based on Resources 2 and 3. Emphasise the role of Strategic Questioning as a process for personal

reflection and group discussion. Workshop facilitators may find it useful to rehearse the strategic questioning process with a friend or colleague before using it in a workshop.

- Explain to participants that you would like them to engage in a time of Strategic Questioning with another member of the group. Once the group has divided into pairs, each pair should nominate one person as a 'listener' and the other as a 'speaker'. The 'listener' will ask questions of the 'speaker'. Hand out a copy of Resource 3 to each participant. This provides a list of Strategic Questions and prompt questions.
- Remind participants that they do not need to ask all of the questions in each set. Encourage participants to word the questions in a way that feels natural for them.
- Each pair chooses one of the themes from 'Woolly Webs' (on OHT 3) as a basis for discussion. The 'speakers' should think of specific situations within that theme so that they can better focus their thinking and answers.
- Participants should work through the six sets of Strategic Questions in Resource 3 in a question and answer conversational style.
- Ask participants to reverse their roles so that the 'listener' becomes the 'speaker' and vice versa.

Debriefing

- Invite participants to share how they felt about the activity. Questions for discussion might include:
  - What did participants think of the strategic questioning process? Was it difficult? Did they feel that it was an authentic way of communicating?
  - Did the process make the group feel confident about the future of the environment?
  - Were participants able to relate their own discussion to other environmental problems?
  - Did any of the group feel ready to engage in action having participated in this activity?
  - How could the Strategic Questioning process be incorporated by participants in their general task as educators?

4. Approaching Environmental Issues in the Classroom

Introduction

Many of the themes related to social and environmental themes reflect contrasting value positions and could place teachers in difficult situations due to the controversies involved.

- Present a mini-lecture which explains that many of the themes related to social and environmental sustainability involve contrasting value positions. Teachers cannot ignore community values or the controversies that result from them, and, sometimes, these controversies can place teachers in difficult situations.

  Explain that the purpose of this activity is to focus on some of the considerations necessary for teaching about potentially controversial issues. This is important as it is necessary for teachers to have a set of ethical principles to follow so that they can always operate in a professional manner.

These principles acknowledge that avoiding values and controversy when teaching about the environment is neither desirable nor possible. The principles provide guidance for adopting a positive and optimistic approach to teaching with an emphasis on the use of critical thinking skills.

- Divide participants into groups of 6-7 members, but ask them to work individually at first.
- Give each participant a copy of Resource 4 which contains a list of ten principles for teaching about environmental issues. Ask participants to read the list and individually rank order the ten principles (with '1' being the most vitally important and '10' being the relatively least important) according to how important they - as individuals - believe they are. The individual rankings are to be marked on Resource 4 in the appropriate column.
- Small groups should now meet to calculate an average rank score for each principle. This will require each small group to total each person's rank scores for each principle, and then to rank order the principles according to the total scores. The principle with the lowest total score is ranked as 'Small Group Rank 1' and the one with the highest total score ranked as 'Small Group Rank 10'. Those rankings can then be entered in the appropriate column.
- The groups should then discuss the small group ranking and see if all group members agree on the outcome. If there is disagreement, and the group believes that the arguments presented are convincing, then the small group results can be changed by consensus.
- The previous steps can now be repeated so that a whole group ranking of the principles is developed. First, total the Small Group Ranks from all groups and then rank order the principles. Then ask for discussion to see if consensus can be reached over any changes to the Whole Group Ranks that any individual or small group believes is necessary.
- Conclude the activity by explaining to participants that they have discussed ten principles for teaching about values-laden issues in a professionally ethical manner and that they will be able to apply these principles as the need arises in the future.

5. The UNESCO-UNEP International Environmental Education Programme

This activity concludes the workshop by illustrating the ways that the UNESCO-UNEP International Environmental Education Programme (IEEP) supports the development and dissemination of innovative ways of educating for sustainable development.

- Resource 5 is a summary of the IEEP. The information can be presented in several ways:
  - as a general handout/information sheet for participants;
  - as the basis for a mini-lecture to conclude the workshop; or
  - as the basis for a group discussion resource in which participants identify activities of the IEEP which they would like to know more about and then write to the addresses supplied for this assistance.

OHT 1

SPACESHIP EARTH

Source: Ehrlich, A. and P. (1987) *Earth*, Thames, Methuen, London.

Imagine that just as you are about to board a jet aircraft, you see a man busily prying rivets out of its wings. As you rush in panic down the steps, he calls out, 'Don't worry, I've taken a lot of rivets out already and the wing hasn't fallen off.' Are you assured?

No sane person would want to travel on a plane whose airline did not have a 'progressive maintenance' programme ... and only a lunatic would want to ride on Spaceship Earth if the components of its ecosystem were being dismantled so fast that maintenance could not begin to keep up repairs ...

The free services that earth provides to civilisation - the air we breathe, the climates in which we live, fresh water, waste disposal, recycling of nutrients, control of potential pests and disease carriers, provision of food - are rapidly being eroded by humanity's destructive impact on the complex biological network of the planet. Humanity is living on its capital, while rapidly destroying the natural systems that are its principal source of income.

OHT's

OHT 2

AN INTERGALACTIC REPORT

Source: Huckle, J. (1988) *Society and Nature*, What We Conserve Book 1, WWF-UK, Godalming.

Some Facts About the Earth's Environment

The earth's environment is suffering from the effects of economic production:

- one-third of the earth's cropland could be destroyed by the year 2000.
- the earth's tropical forests could almost disappear by the year 2060.
- 60,000 square km of land are lost to desert each year.
- 20 per cent of all species of plants and animals on earth could disappear by the year 2000.
- fuel burning puts 4.5 billion tonnes of carbon into the earth's atmosphere each year. As a result, the earth's climate may be getting warmer. Shifts in climate belts are making it harder to grow food in some areas.
- a nuclear war on earth would put so much dust in the atmosphere that the sun's rays would be blotted out and the earth would suffer a nuclear winter. This would cause many of the earth's plants and animals to become extinct.

- thousands of lakes and trees in Europe, one of earth's continents, have been poisoned by acid rain.
- pollution and overfishing threaten life in the earth's oceans.
- the earth's nations cannot agree on how to use Antarctica, the earth's untouched continent.
- the people of earth understand ecology. They know a great deal about how to use ecosystems without damaging them. They have used this knowledge well in some places but not in others.
- some people on earth have been able to develop their way of life and at the same time conserve nature. Other people destroy nature because they are poor, because they are greedy, or because they lack power to change what is going on.

OHT'S

OHT 3

1. Climate Change
2. Fresh Water
3. Oceans and Coastal Areas
4. Biological Diversity
5. Environmental Effects of Industry
6. Women and Poverty
7. Quality of Life
8. Environmental Education
9. The Peace Dividend
10. Environmental Impact Assessment

RESOURCE 1

TEN SOCIAL AND ENVIRONMENTAL THEMES

1. Climate Change

Natural levels of carbon dioxide (CO_2) and other gases in the atmosphere make life possible on Earth. Without them, the Earth would be a frozen desert. They act like glass in a greenhouse, letting the sun's rays through but trapping some of the heat that would otherwise be radiated back into space. Human activities have upset the natural balance. As more heat-absorbing gases accumulate in the atmosphere, more solar radiation is trapped and the atmosphere heats up.

About four-fifths of the CO_2, which accounts for over half of the warming effect, is released by the burning of fossil fuels (eg petrol, gas, coal); the rest results from the destruction of vegetation, mainly cutting down forests. Trees when alive take in CO_2 but release it when cut down, burned or left to decay. Chlorofluorocarbons (CFCs), used in fridges and air conditioners, spray cans, fire extinguishers and in solvents for cleaning components of computers, account for another quarter of this warming effect; the two other main gases are methane and nitrous oxide, both given off by fossil fuels and burning of vegetation. Methane is also emitted by bacterial action, eg in the gut of ruminants and in the mud of rice paddies, and nitrous oxide from the decomposition of nitrogenous fertilisers.

Source: UNEP

2. Fresh Water

Water is essential to all life on Earth and in theory there is more than enough fresh water to meet all our needs. But it is unevenly distributed. Although 70% of the globe's surface is covered by water, less than 3% of it is fresh water. Of this, 79% is icecaps, 20% is not easily accessible ground water and only 1% is easily available from lakes, rivers and wells.

Water pollution renders water supplies unfit for various human uses. Dirty water is known to cause the deaths of at least 25,000 people daily.

Industrial wastes, sewage and agricultural run-off poison rivers and lakes with chemicals. Often one country's wastes run into another's drinking water, and its public water projects cut off another's supplies. Cutting down forests upstream may cause floods or shortages downstream. Of over 200 river systems shared by two or more countries, many have caused international conflict.

Source: UNEP

3. Oceans and Coastal Areas

Earth from space shows its real colour - blue. We live on a blue planet. Water covers over 70% of the Earth's surface.

The oceans are always in movement - waves, currents, upwellings, evaporation into clouds, rain and wind, tornadoes and cyclones, whirlpools.

Oceans are vital for life on Earth: they determine climate, provide major contribution of food for man, contain untold mineral wealth and attract tourists to their shores. In their natural state, they clean and regulate themselves. But most of the world's wastes are discharged into the seas and remain trapped in coastal waters, poisoning marine life.

Many species of fish depend on mangroves, seagrasses and coral reefs at critical stages in their life cycles but these important fish nurseries, coastal barriers and pollution filters are being degraded and destroyed at unprecedented rates by pollution, over-exploitation and over-development for the tourist industry.

Source: UNEP

4. Biological Diversity

The Earth's total biological diversity is currently estimated at between 5 and 100 million species. It comprises all forms of life and the ecosystems of which they are a part. The diversity of living things is crucial to humanity. Farming was first made possible by domesticating wild species; selective breeding made them more productive. Genetic resources taken from the wild are still vital as sources of medicines, food and raw materials for industry.

Yet pollution, over-exploitation and habitat destruction are causing up to 100 species to become extinct per day - many times the natural rate. Thousands will vanish before their potential is known since only about 1.4 million species have been described so far. About 5,000 of the estimated total of plant species have been cultivated for food, and the health of these is dependent on genetic resources from the wild.

Deforestation and desertification are particular problems. Forests and woodlands cover about a third of the world's land surface. They regulate climate, protect water resources, provide forest products worth billions of dollars, and are home to millions of plant and animal species. But forests are disappearing all over the world at the rate of over 20 million hectares per year. Half of the world's population depends on them for fuel, but some 100 million people in 22 countries no longer have enough trees to meet their minimal fuel needs. As forests are cut down, climatic balances are also disrupted and fertile soil is washed away.

The United Nations defines desertification as 'land degradation in arid, semi-arid and dry sub-humid areas resulting mainly from adverse human impact'. Today, these drylands represent 40-50% of the total land surface of the globe, affecting the lives and well-being of some 900 million people.

Source: UNEP

5. Environmental Effects of Industry

Industry is essential to the development of a country and the prosperity of its people. But industrial processes and the production, transformation and final use of energy cause major problems. Besides depleting natural resources, they generate airborne emissions, water effluents and solid wastes, leading to climate change, air and water pollution, acid rain, deforestation and land degradation.

Worldwide totals of hazardous wastes generated by industry are impossible to estimate since many countries differ over definitions and very little information is available. Industrial countries probably generate over 90% of the world's annual total of about 350 million tonnes of hazardous wastes. Safe disposal of these is an increasing problem and industrial accidents such as those of Bhopal (India), Chernobyl (Ukraine) and Basel (Switzerland) often have tragic environmental consequences.

Source: UNEP

6. Women and Poverty

Four-fifths of the billion people who live in poverty are in the rural areas of the developing world, mostly in Asia and sub-Saharan Africa: women comprise a large percentage of them. The number of rural women living in absolute poverty has risen by 50% over the last two decades, according to the International Fund for Agricultural Development.

Although it is recognised that women are responsible for producing food, they have the least access to means of production, receive the lowest wages and know least about how to improve the productivity of land with modern inputs and technology. Migration by rural men to urban areas, or overseas, to escape poverty traps has increased the number of women who have to carry the full burden of earning income and managing households for their families; and there have been no strategies and facilities to enable women to do so.

The only permanent solution for female poverty is to create the environment in which women can stand on their own feet, where they can emerge from such dependency, and where they can get equitable access to economic and social opportunities by building up their own capacities. In other words, empowerment of women is the only realistic and long-term strategy for liberating them from the ravages of poverty.

Poverty elimination strategies should treat women as not just the worst victims of poverty - which they certainly are - but also as potential agents of change. There is as yet little recognition of the positive contribution of women to development and change, but it must be acknowledged if the world is to graduate from a welfare approach to an empowerment approach to poverty. Empowering women by building up their capacities and equalising access to market opportunities is the only reliable strategy for liberating societies from their continuing burden of poverty. Investment in education, health and credit is the core of women's empowerment. And such empowerment is the beginning of a more dynamic strategy for the elimination of poverty.

Source: Haq, Khadija (1995) Poverty Has a Woman's Face, *Our Planet*, 7(2), 15-17.

7. Quality of Life

The concept of quality of life refers to our health and happiness, both related to the quality of our environment. Standard of living refers to our consumption of goods and services, which may or may not make us happier or healthier. There is a difference between quality of life and standard of living.

Human health, population density, development and the environment are intimately related. In 1995, there were over 5.6 billion people on Earth and it is expected to exceed 8 billion by the year 2020.

Population growth is greatest in developing countries and this growth helps accelerate environmental degradation and human poverty. Half of all the people in developing countries still do not have safe water to drink; waterborne diseases kill 25,000 people daily; and about 14 million children under the age of five die each year from hunger and illness.

In many cities of both developed and developing countries, crime, drug abuse, car accidents, stress, urban decay and pollution negatively affect people's lives. Sustainable development, which involves environmental protection, contributes to the improved health and well-being of individuals and communities.

Source: UNEP

8. Environmental Education

Environmental education encourages awareness of the problems caused by the degradation of our planet. It teaches people that conservation of natural resources must be an integral part of every life-style, because it is important to economic and social development.

Environmental education aims amongst other things at improving quality of life through bringing about an understanding of natural processes, care of the environment and the development of skill in rational utilisation of resources.

Environmental education is now included in school curricula at most levels in most countries but, as education budgets are declining, it is important that teachers and resources are used to best effect.

Source: UNEP

9. The Peace Dividend

Global military spending has been cut by almost a quarter from nearly $1 trillion in 1987 to $767 billion in 1994 (at constant 1991 prices). This works out at a cut of around 4% per annum, led by the United States and the former Soviet Union - with a somewhat lower rate of about 2% a year in the developing world. In all, this yielded an unprecedented saving of $935 billion.

Even heavily reduced military spending is still a major burden on the world's economic and environmental resources. Globally, it now equals the yearly income of about half the world's people. Arms still pose the greatest threat to the global environment. And defence establishments all over the world are the main consumers of the best scientific talent, which could otherwise be employed on productive technology.

The *1994 Human Development Report* estimates that a 12% cut in global military spending could provide safe drinking water and primary health care (including the immunisation of all children) for everyone on Earth, and ensure that severe malnutrition was eliminated and moderate malnutrition cut in half. An 8% cut could finance basic family planning for all willing couples and help stabilise world population by 2015. Even a 4% cut could release the resource to reduce adult illiteracy by half, provide universal primary education and educate women to the same level as men.

Source: Ul Haq, Mahbub (1995) Whatever Happened to the Peace Dividend?, *Our Planet*, 7(1), 8-10.

10. Environmental Impact Assessment

In 1987 the Brundtland Commission called for improved Environmental Impact Assessment (EIA) procedures at all levels of government. *Agenda 21* of UNCED further emphasised the need for an effective EIA process and for integrating environment and development.

The principal objective should be promoting the practical and effective use of EIA for developing, formulating and implementing sound environmental management and sustainable development - and enhancing developing countries' capacities in this area. EIA should be used not just as a measure for minimising environmental degradation, but as a planning tool to achieve the optimum alternative. The principles of sustainability need to be translated into operational terms.

There is no single best practice applicable to all countries, and EIA must be tailored to national needs and capabilities. Expertise in its management is lacking in developing countries. Capacity-building for sustainable development should be based on local requirements and socio-economic conditions in developing countries and countries in transition. It should begin by undertaking a multifaceted and dynamic assessment of needs. Developing country practitioners must be involved in actual activities so as to enhance their skills in conducting, managing and monitoring EIA.

The environment must be integrated into sectoral planning and activities - and into national development plans, policies and budgets. EIA must be applied to trade policies, structural adjustment and country programmes as part of injecting environmental considerations into macroeconomic policies.

Source: Abaza, H. (1995) A New Role for Environmental Assessment, *Our Planet* , 7(1), 25-27.

RESOURCE 2

STRATEGIC QUESTIONING: WHAT IS IT?

Source: Adapted from Peavy, F. (1994) *By Life's Grace: Musings on the Essence of Social Change*, New Society Publishers, Philadelphia, pp. 86-111.

1. Currently, many individuals, groups, governments and companies are attempting to develop strategies based on the principles of ecologically sustainable and socially just development. This will involve lots of change for us. Change is often accompanied by a range of uncomfortable emotions including denial, fear and resistance. However, change also provides opportunities for new ideas to emerge.
2. Strategic Questioning is a form of questioning (or consulting) which assists the integration of new ideas and strategies into the development of communities in such a way that people can feel comfortable. Strategic Questioning has been developed by Fran Peavy, a social change worker from North America.
3. Six 'question families' are used in Strategic Questioning. These move from introductory documentation questions through to more dynamic and reflective questions. These question families are presented in Resource 3.
4. Strategic Questioning helps groups create their own solutions to their own problems. For example, Strategic Questioning has been used in India by communities as a means of identifying strategies for improving water quality in the Ganges River. Local people, in partnership with the government, are developing exciting new ways to clean up the river for themselves, and their children.
5. One of the assumptions behind the Strategic Questioning process is that questions have the potential to be significant. Some questions are more significant than others depending on the circumstances, or context, in which they are asked.
6. When participants work in pairs as 'speaker' and 'listener' to discuss a theme, it is very important to listen to the answers: identify what are the significant things for each person and group.
7. The best way to appreciate the power of Strategic Questioning is to try it. In this activity, participants work in pairs to interview each other about one of the themes in the 'Woolly Web' exercise. Resource 3 provides a copy of the six families of Strategic Questions and a range of 'prompt questions' for each one. These questions can be used to guide pairs as they interview each other about a selected theme.

RESOURCE 3

STRATEGIC QUESTIONS

1. Observation Questions

For example:

- What do you need to know about the issue of .....?
- Where have you acquired this information from?
- Is it an issue that affects your local area?

2. Feelings/Affective Questions:

For example:

- How do you feel about this topic/issue?
- How has this issue affected your own physical or emotional health (that you know of)?
- What do you feel in your body when you think or talk about this issue/topic?

3. Visioning Questions

For example:

- What is the meaning of this issue in your own life?
- How could this issue be addressed/changed so it would be as you wished it to be?

4. Change Questions

For example:

- What will it take to bring the current situation towards the ideal?
- What exactly needs to change here?
- How might these changes come about? Name as many ways as possible.

5. Personal Inventory and Support Questions

For example:

- What would it take for you to participate in the change?
- What would you like to do that might be useful in bringing about these changes?
- What support would you need to work for this change?

6. Personal Action Questions

For example:

- Who do you need to talk to?
- How can you get others to a meeting to work on this issue?

RESOURCE 4

PRINCIPLES FOR TEACHING ABOUT ENVIRONMENTAL ISSUES

Source: Adapted from Pennock, M. and Bardwell, L. (1994) *Approaching Environmental Issues in the Classroom*, National Centre for Environmental Education and Training, University of Michigan; and Fien, J. (1988) *Education for the Australian Environment*, Curriculum Development Centre, Canberra.

PRINCIPLES	INDIVIDUAL RANK	SMALL GROUP RANK	WHOLE GROUP RANK
Be honest in your presentation of views. Be aware of your own feelings and opinions about an issue. Be clear about whether concerns are your students' or your own. If you decide to express your opinions on an issue, make it clear to students that this is your personal view and that it is okay if other people, including them, disagree.			
Teach about the complexity of many issues. Do not try to protect students from it, but recognise the difficulty of such complexity, even for adults, and that the way we teach needs to be developmentally appropriate.			
Create a learning environment in which students feel a sense of investment, ownership and empowerment. Consider how you can give authority and responsibility to students. Be enthusiastic yourself about the learning process, the project the students are doing, and life in general.			
Encourage all students to participate and share their views - but no-one has to share if he/she would rather not.			
Encourage an atmosphere of openness, acceptance and respect by being sensitive to students' needs. Listen to their concerns with your complete attention. Respect their feelings and, particularly with young people, err on the side of caution regarding their emotions.			
Have well articulated goals and rationales. Encourage parents and others to voice their questions and concerns. Have a support system of people such as an administrator, colleagues, interested parents and community members.			
Teach multiple perspectives on all topics but be aware that 'balanced' teaching is not possible given the competing and dominant influences and messages that students are constantly exposed to outside of the classroom. Instead ensure that 'balanced learning' can take place by ensuring that the quality of evidence from all viewpoints is as objective as possible, and that its presentation reflects the aspiration of balanced learning.			
Consider your students' developmental needs, including age, gender, family contexts, reading skills, thinking styles and so on.			
Encourage students to accept that changing their mind after evaluating an issue during a discussion is a sign of maturity.			
Allow disagreements between students to be constructive rather than destructive. Let disagreement further the learning process.			

RESOURCE 5

THE UNESCO-UNEP INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME (IEEP): A GLOBAL ENTERPRISE

Source: Adapted from Environmental Education Unit, UNESCO

The UNESCO-UNEP International Environmental Education Programme is co-operating with the appropriate bodies of the United Nations system, governments, non-governmental organisations and others to establish a programme to integrate the decisions of the United Nations Conference on Environmental Development (UNCED) into the existing United Nations framework adapted to the needs of educators at different levels and circumstances.

The goals of environmental education are mainly:

- sensitising individuals, groups, communities and nations to ecological, economic, social and cultural interdependence;
- providing everyone with the opportunity to acquire awareness, knowledge, skills and commitment in order to protect and improve our environment for sustainable development;
- creating new environment-friendly behaviour patterns and lifestyle;
- developing environmental ethics;
- fostering environmental education for all;
- improving the quality of life;
- promoting effective public participation in decision-making with respect to environment and development issues.

As guiding principles, environmental education:

- considers the environment in its totality: natural, technological, economic, political, cultural, etc
- is interdisciplinary in its approach;
- is a continuous, lifelong process;
- examines major environment and development issues from local, national, regional and global points of view;
- stresses the value and necessity of local, national and international co-operation;
- explicitly considers environmental aspects in plans for sustainable development and growth;
- helps learners discover the real causes of environmental and development problems;
- enables learners to assume roles in planning their learning experiences and making decisions;
- emphasizes the complexity of environmental and development problems and thus the need to develop critical thinking and problem-solving skills;
- relates environmental sensitivity, knowledge, problem-solving skills and the clarification of values;
- employs diverse learning environments and educational approaches to teaching/learning in, for and about the environment and development.

The main focus of the International Environmental Education Programme thus rests on:

- developing general environmental and development awareness;
- improving information and knowledge;
- defining concepts, methods and approaches;
- incorporating environment, development and population dimensions into the educational process of all countries;
- promoting values, attitudes and behaviours;
- fostering ethical responsibilities;
- promoting commitments for action for the protection and improvement of the environment;
- stimulating participation in sustainable development decision-making and activities;
- improving quality of life.

Who are the Target Audiences of Environmental Education?

They include as a priority, the formal and non-formal education target groups: students and teachers in pre-primary, primary, secondary, industrial and agricultural schools, general university education, educational decision makers, and the general public.

The audiences also include

- economists and ecologists;
- technicians of most kinds;
- sanitation workers;
- researchers;

- planners and designers;
- architects and engineers;
- farmers and foresters;
- fishing folk;
- people in industry and trade;
- other 'grass-roots' decision makers; and
- mass media specialists.

IEEP's Contributions, 1975-1993

Exchange Information

- 12,000 copies of IEEP documents distributed annually
- 200,000 copies of the newsletter, *Connect*, distributed annually
- workshops, seminars and training courses held in all parts of the world each year
- *International Strategy for Action in the Field of Environmental Education and Training for the 1990s* distributed in 9 languages.

Research and Experimentation

- 145 pilot, experimental and research projects and studies to help Member States incorporate EE in their educational policies and plans, school curricula, teacher education, university teaching, and non-formal education.

Curriculum and Materials Development

- 54 EE curriculum prototypes for primary and secondary schools and teacher education; strategies and guidelines for EE development; EE modules on environmental themes; 18 EE basic documents and 49 reports.

Training of Personnel

- 45 international, regional and sub-regional training seminars and courses through the world.

IEEP's Impacts

- contributed to the world's general awareness about and clarification of the concept of the environment as encompassing both natural and built components;
- fostered through EE the recognition, solution and prevention of environmental and development problems at global, regional and national levels;
- contributed to the identification of needs and priorities, the clarification and development of the philosophy, objectives and guiding principles of environmental education that have served as a common denominator in the educational renewal of Member States;
- developed EE guidelines and strategies as well as educational materials: curriculum prototypes, modules, posters and audio-visual aids, and promoted their local adaptation;
- trained key educational personnel to serve as a 'multiplier effect' for fostering the development of environmental education;
- fostered international co-operation in environmental education through technical and financial support, field missions, and participation in relevant activities of international governmental and non-governmental organisations;
- supported Member States of which 95 countries have adopted (or are adopting) environmental education as a key component of national formal and non-formal education;
- developed curriculum prototypes for primary and secondary schools and for teachers on the basis of sub-regional environmental and educational needs and priorities for Africa, the Arab States, Latin America and the Caribbean, and the Asia-Pacific regions, to serve through local adaptation, as seeds for reorientating education towards sustainable development;
- provided inputs based on its activities since 1975 to UNCED. In this context Chapter 36 of *Agenda 21* has been based on the fundamental principles of the Declaration and Recommendations of the Intergovernmental Conference on Environmental Education organised by UNESCO and UNEP - Tbilisi 1977 (Para 36.1 *Agenda 21*).

Evaluation and IEEP

An important aspect of IEEP's work is the continuous, built-in evaluation of its activities, with the purpose of enhancing their relevance to Member States' needs.

This assessment is accomplished through various mechanisms:

- reflection of IEEP's impact on the education systems of Member States and of the needs and priorities for EE development during the General Conferences of UNESCO and meetings of the Governing Council of UNEP;
- annual evaluation of IEEP's activities at the UNESCO-UNEP Inter-Secretariat Steering Committee meetings;
- evaluation of IEEP's newsletter, CONNECT, by its readers in 1988 and 1991-1992;
- evaluation of EE series documents by their users;

- evaluation of IEEP's training activities by the trainees themselves;
- evaluation of IEEP by teams of external consultants in 1985, 1988 and 1995.

Future Perspectives

IEEP will focus on reorientating education towards sustainable development and public awareness and will be guided by the:

- *International Strategy for Action in the Field of Environmental Education and Training for the 1990s*
- *Medium-Term Plan* and the Biennial Programme and Budget of both UNESCO and UNEP
- UN *System-Wide Medium-Term Environment Programme*
- Jomtien Conference on Education for All (1990)
- UN Conference on Environment and Development, Brazil, 1992. (*Agenda 21*, Chapter 36).

How to Keep in Touch with IEEP

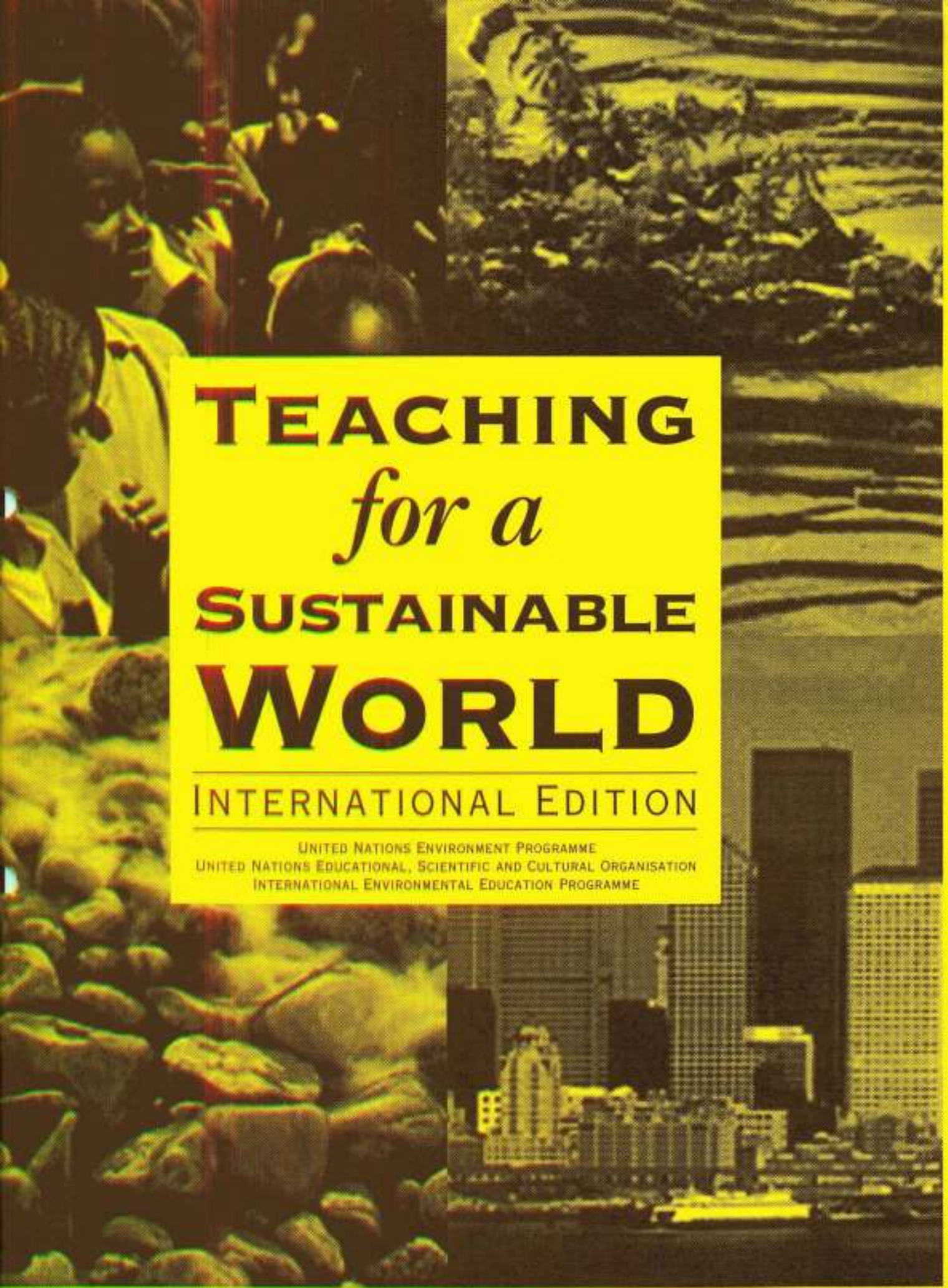
IEEP built a worldwide, computerised system whose databases contain information on 1500 institutions, as found in the *International Directory of Institutions Active in the Field of Environmental Education*.

To receive *Connect* and documents in the EE Series, or to obtain further information and assistance in developing or strengthening EE in your country, you may contact IEEP as follows:

Chief, Environmental Education Unit
UNESCO-EPD
7, place de Fontenoy
75352 Paris, 07 SP, France
Fax +(33 1) 40 65 94 05

Chief, Environmental Education and Training Unit
UNEP
PO Box 30552
Nairobi, Kenya
Fax +254 623917

IEEP documents and *Connect* are available to ministries, educational institutions, youth and ecological centres, etc. free of charge.



MODULE 2

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID
AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC.
GRIFFITH UNIVERSITY

INTRODUCTION *to* ENVIRONMENTAL EDUCATION

JOHN FIEN
GRIFFITH UNIVERSITY
AUSTRALIA

INTRODUCTION

This workshop is one of the core modules in this series and provides an introduction to the nature and objectives of environmental education.

This workshop module provides a sequenced set of activities which may be adapted to local circumstances in order to provide an introduction to the nature and objectives of environmental education.

Three key themes about environmental education are introduced in this module:

- The fundamental goal of environmental education is the creation of sustainable environments in which people can live and work.

  A sustainable environment is one in which the natural environment, economic development and social life are seen as mutually dependent - and the interaction between them contributes to the sustainability and enhancement of the quality of people's lives and the natural environment.
- Environmental education is an across-the-curriculum approach to learning which helps individuals and groups to understand the concept of 'a sustainable environment'. The ultimate aim of such understanding is to help young people develop caring and committed attitudes and the desire to act responsibly in the environment and towards each other.
- Therefore, environmental education is concerned not only with teaching conceptual knowledge and skills for monitoring and measuring environmental quality, but also with the development of the values, attitudes and skills which will motivate and empower young people to work, both individually and with others, to help promote the sustainability of natural and social environments.

OUTCOMES

Through participation in the activities in this workshop, participants will develop:

- an understanding of the nature and scope of environmental education;
- an understanding of sustainable development concepts and values;

- an understanding of the objectives of education *about*, *in* and *for* the environment;
- an understanding of the relevance of environmental education to their areas of teaching;
- skills to evaluate environmental education activities; and
- the ability to plan themes and activities in environmental education relevant to their areas of teaching.

WORKSHOP OUTLINE

The workshop consists of a number of activities which are organised around three themes:

1. Introduction

This activity is an ice-breaker which enables participants to form into working groups of three in which they will undertake many other activities in the workshop. The activity involves a discussion of the results of an international survey of environmental concern.

2. A Sustainable Environment: The Ultimate Goal of Environmental Education

This activity provides the materials and advice for a mini-lecture and whole group discussion on the concept of 'sustainable environment' and the important role of environmental education in the transition to sustainability.

3. What is Environmental Education?

This involves two games, 'EC' and 'Cooperative Cards', debriefing activities and a mini-lecture.

4. Environmental Education in Practice

This involves individual and group work to develop and evaluate a number of environmental education themes and activities related to participants' interests in teaching.

The workshop ends with a review/consolidation of key themes.

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1:	Overview of Workshop
OHT 2:	The State of the Planet
OHT 3:	The Four Systems of the Environment
OHT 4:	The Systems in the Environment are Interdependent
OHT 5:	The Values Underlying a Sustainable Environment
OHT 6:	The Role of Environmental Education from 'Agenda 21'
OHT 7:	The 3 As of Environmental Education
OHT 8:	Definitions of Environmental Education
OHT 9:	Three Approaches to Environmental Education
OHT 10:	The Ultimate Goals of Environmental Education
OHT 11:	Objectives of Environmental Education
OHT 12:	Education *for* the Environment

RESOURCES

Resource 1: Worldwide Concern about the Environment

Resource 2: The 'EC' Game

Resource 3: Windows on Seven Lessons

READING

Reading 1: Environmental Education for a Sustainable Environment

B) TO OBTAIN

All resources needed for this workshop have been provided. However, facilitators may choose to revise the overhead transparencies and/or workshop resources according to the cultural and educational contexts in which they are located. In particular, facilitators might give consideration to:

- OHT 8: Provide a definition of environmental education from local education policy documents.
- Resource 2: Replace some of the questions with ones that may be more culturally relevant to participants.
- Resource 3: Replace some of the classroom 'glimpses' with short case studies that may be more culturally or educationally relevant to participants.

Activity 3B requires the preparation of five playing-card size slips of paper/card per participant.

ADDITIONAL READING

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UNESCO-UNEP (1978) The Tbilisi Declaration, *Connect*, III(1), 1-8.

UNESCO-UNEP (1980) *Environmental Education in the Light of the Tbilisi Conference*, UNESCO, Paris.

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ACKNOWLEDGEMENTS

I wish to acknowledge the advice of environmental education colleagues in the Asia-Pacific region and South Africa who have alerted me to the importance of treating issues of sustainable development and sustainable environments in a careful way. I especially acknowledge the diagrams in OHT 3 and OHT 5 provided by Rob O'Donoghue of the Natal Parks Board, South Africa, as they have provided me with a way of illustrating the interdependence of biophysical, social, economic and political systems and the values that underlie them if sustainablility is to be the goal.

1. Introduction

Introduce the theme of the workshop - 'The Nature and Objectives of Environmental Education' - and outline the sequence of activities set out on OHT 1.

Ask participants to introduce themselves to two people near them and to form groups of three who will work together for many activities in the workshop.

Distribute Resource 1 which is a summary of a study of attitudes to the environment in fourteen countries from different parts of the world. Ask the groups to review Resource 1 and to discuss two points:

- In a broad sense, how do the results of the international survey compare with general attitudes to the environment in your country?
- How aware about the state of the planet are young people in your country?
- How could the results of this survey - or a similar survey in your country - be used to justify the inclusion of environmental education in the school curriculum?

2. A Sustainable Environment: The Ultimate Goal of Environmental Education

This activity introduces the fundamental goal of environmental education as the creation of sustainable environments in which people can live and work.

A sustainable environment is one in which the natural environment, economic development and social life are seen as mutually dependent - and the interaction between them contributes to the sustainability and enhancement of the quality of people's lives and the natural environment.

A. Group Discussion

- Display OHT 2 which is a list of major global environmental issues.
- Ask participants to comment on these and to add others that they believe are important.
- Highlight the connection between economic development and the needs of people to have a reliable livelihood, and the need to ensure the long-term sustainability of natural resources to ensure that the economy and people's livelihoods are secure.
- Explain that all global environmental issues have their local manifestations or counterparts. Ask participants to indicate examples of local manifestations or counterparts to the list of global concerns in OHT 2.
- Direct attention to the quotation at the bottom of OHT 2. Ask participants in their groups of three to discuss the role that their teaching can play in helping to bring about the changes listed in the quotation.
- In debriefing the discussion, ask groups to report briefly. In your comments, highlight the role that environmental education can lay in helping to set 'new directions for economic and social development'.

B. Mini-lecture

This section of the activity is a mini-lecture which uses the previous discussion as a basis for helping participants understand the concept of a 'sustainable environment'. A series of OHTs are provided to illustrate (i) a broad definition of environment; and then (ii) the values that lie behind the concept of a sustainable environment.

- Display OHT 3. Focus participants' attention on the circle which represents the 'environment' and each of the four systems, in turn:
  - the *biophysical* system which provides the life support systems for all life, human and non-human;
  - the *social* system in which people live together in social systems;
  - the *economic* system which provides a means of livelihood (jobs and money) for people; and
  - the *political* system through which social power is exercised to make policies and decisions about the way social and economic systems use the biophysical environment.
- Ask the group, 'Do you think that any of the four systems in the environment can exist without the others - and why?'

  Note: The desired answer is 'no' but I have found that interesting comments and discussions flow from participants who think otherwise. I have generally asked the rest of the group to respond on such occasions and they then point out the significance of the arrows on the diagram.
- Direct participant attention to the arrows on OHT 3 which illustrate the interactions and interdependence between all the systems.
- Display OHT 4 which contains two quotations which emphasise the relationships between the systems in the environment. They are by Dr Mustapha Tolba, the former Director of the United Nations Environment Programme and Dr Pat Devlin, a New Zealand lecturer in environmental management.
- Display OHT 5, explaining that it is an extension of OHT 3. Ask participants to indicate how it is different from OHT 3.

They will quickly point out that four words - conservation, peace, development and democracy - have been added and that each word relates to one of the environmental systems.

Then ask participants - perhaps in their groups of three - to indicate what purpose those words serve.

The 'answer' is that the words - conservation, peace, development and democracy - represent the values that underlie the sustainability of the four systems. For example:

- *Conservation* is needed to ensure that biophysical systems can continue to provide life support systems for all living things.
- *Peace* results when people are able to live cooperatively and in harmony with each other.
- *Development* is needed for people to be able to support themselves.
- *Democracy* results when people are able to have their say over how biophysical, social and economic systems should be managed.

- Remind the group that the arrows in the middle of OHT 5 are important and that they indicate that the four values - conservation, peace, development and democracy - are inter-related and are essential as a foundation for a sustainable environment.
- Conclude the mini-lecture by showing OHT 6. It is a quotation from *Agenda 21*, the action plan developed by the world leaders who attended the 1992 United

Nations Conference on Environment and Development in Rio de Janeiro, Brazil (The Earth Summit). The quotation emphasises the important role that environmental education has to play in creating sustainable development and a sustainable environment.

3. What is Environmental Education?

Reading 1 provides an overview of the aims, objectives and guiding principles of environmental education, as well as a discussion of three approaches to environmental education: education *about*, *in* and *for* the environment.

Along with other sources in the reading list, this reading may be used as the basis for a lecture or seminar discussion. However, in order to model the processes of environmental education through the pedagogy we practise, it is recommended that the material be covered by the following four steps:

A. The 'EC' Game

'EC' is a game much like Bingo except that squares and lines are completed by participants moving around the room and seeking information from each other.

Participants are given a copy of Resource 2 and are asked to fill in as many squares as possible by questioning other group members. Having found someone who can answer one of the questions, the name of the person and a brief answer are written in the appropriate box. That person's name can appear only once on the sheet. Each time a row of boxes (horizontally, vertically or diagonally) is completed, participants call out the letters 'EC' - just as in Bingo.

- Debriefing:
  - After initial comments on personal responses to the game, ask participants to suggest what the letters 'EC' might represent.
  - Many answers will be given but explain that the one of particular interest in this workshop is 'Environmental Citizen'.
  - Explain that an 'Environmental Citizen' lives by the 'Three As' or Aims of Environmental Education (OHT 7): Awareness and knowledge, Attitudes and personal lifestyle decisions, and Action for a better environment.

B. Cooperative Cards Game

This group discussion/game has two objectives. First, it extends the three aims into a range of objectives for environmental education; and second, it models the cooperative processes that underlie the philosophy of environmental education - and the creation of a sustainable social environment.

- Sit participants around tables (or on the floor) in groups of 5-6.
- Give each participant five slips of paper/card (approximately the size of a playing card).
- Ask participants to write their initials in a corner of each card.
- Then ask participants to use their knowledge of the 'Three As' or aims of environmental education to write five more detailed or specific objectives for environmental education - one for each card. (Some groups may need an explanation of the differences between the general nature of 'aims' and the more specific nature of 'objectives')

- When this is completed, all the cards in the group are pooled, shuffled and dealt (as in a game of cards), four to each 'player'. The remainder are placed face down in the middle.
- Explain that no talking or non-verbal communication of any kind is allowed.
- Taking turns, players pick up one card and discard one card.
- The aim is for all players to have five 'approved' cards, none of which they wish to discard.
- Players examine their cards to see which ones need to be discarded when it comes to their turn in the game. Cards to be discarded include (a) ones participants wrote themselves as evidenced by their initials , and (b) ones they believe are less important than the objectives they wrote themselves.
- The game may come to a standstill when some players have five cards (full hands) and others are unwilling/unable to retain cards in the middle of the table. Remind participants of the 'no communication' rule.

There are no rules to tell participants what to do at these impasses. The silence causes reflection. Usually, one or more players with a full hand will re-enter the game by discarding one, and through this generosity help everyone in the group obtain a full hand.

- Debriefing:
  - After initial comments on personal responses to the game, focus participant attention on the assumptions about the cooperative process in the game and how this links to environmental education and related approaches such as development education, global education, and peace education.
  - Tell participants that the next stage of debriefing will follow a mini-lecture. Ask them to remain in their groups and to keep their cards for the second stage of the debriefing.

C. Mini-lecture

Use the information from Reading 1 to present a 15 minute mini-lecture on the definition, aims and objectives of environmental education. OHTs 8-12 may be used to support this.

4. Environmental Education in Practice

This activity requires participants to apply previous learning to the development and evaluation of several examples of environmental education in practice. There are two parts to this activity: Imagining and Evaluating.

A. Imagining

- Ask participants to write a 3-5 sentence description of a 'good' environmental education lesson ('good' means addressing some of the objectives just outlined). Tell participants to imagine they are looking into a classroom window (or peering from behind a tree if it is an outside activity). Their task is to describe what they can see going on. This may be a lesson they have seen or taught - or a lesson they would like to see or teach.
- Ask participants in groups of three to share their descriptions/stories with each other, explaining the environmental education objectives that are being addressed.

- Ask for a selection of descriptions/stories to be read to the whole class, with comments on the environmental education objectives being addressed.

B. Evaluating

- Distribute copies of Resource 3. It contains descriptions of seven sample environmental education lessons/activities. These provide extra ideas for participants on the range of activities possible in environmental education.
- Ask groups of three participants to read the seven lesson descriptions, and to answer the following questions:
  - How do the lessons you have imagined and discussed relate to these lessons?
  - Which of the seven lessons would you most like to teach? Why?
  - Are any of the seven lessons not really 'good' environmental education? Why?
  - How do the lessons contribute to students learning for a sustainable environment?
  - Classify the seven lessons according to how they fit into the categories of education *about*, *in* and *for* the environment.

5. Conclusion

Review the three activities in the workshop, focusing upon:

- the four systems in the environment and their interdependence
- a definition of a sustainable environment
- a definition of environmental education
- the objectives of education *for* the environment.

Emphasise the differences between:

- Education *about* the environment - Chiefly knowledge and some investigation skills.
- Education *in* the environment - Chiefly attitudes and investigation skills.
- Education *for* the environment - Involves using the knowledge, skills and attitudes of education *about* and *in* the environment as a means to the end goal of promoting a sustainable environment by educating young people to have an environmental ethic and to be able to take appropriate lifestyle decisions and community action for environmental protection and improvement.

Display OHT 12 again. This reinforces the importance of education *for* the environment



OHT 1

OVERVIEW OF WORKSHOP

1. The need for environmental education

2. What is environmental education?

3. Environmental education in practice

4. Review

OHT's

OHT 2

The State of the Planet

Source: Lacey, C. (1990) Education for Change, in *Greenprints for Action*, Option Module 3, National Extension College and NALGO Education, Cambridge and London, p. 13.

- The Amazon rainforest which took 60 million years to evolve could all be gone within our lifetime.

- Increases in carbon dioxide and other 'greenhouse gases' and the destruction of the ozone layer are causing climatic changes on a global scale.

- Leakage of PCBs from industrial waste could cause the extinction of marine mammals inside 40 years.

- Acid rain is destroying forests, lakes and major historic landmarks in Europe and North America.

- Whole nations have had their economies damaged so badly that their health and education infrastructure may never recover. Current estimates are that 14 million children die every year from diseases which are unknown or do not cause child death in First World countries.

- The devastating economies of many countries are causing intense pressure on natural ecosystems as resources of soil and forests are exploited in order to provide daily necessities as well as export income to pay off foreign debt.

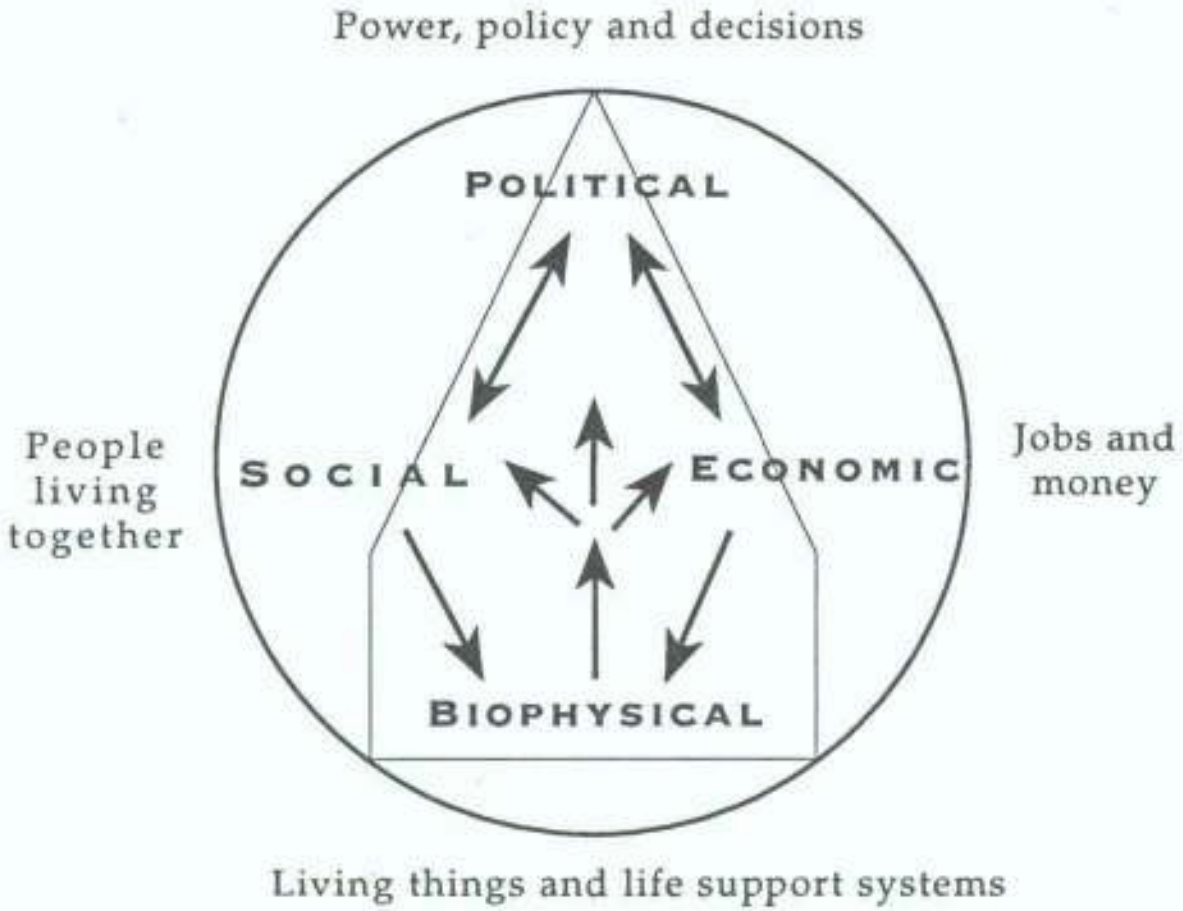
'Our list could continue but enough has already been described to point to the immediate need for emergency technological change as soon as industry can respond. Beyond this there is the need for substantial social and economic change as we absorb the effects of damage already done and develop new directions for economic and social development.'

OHT'S

OHT 3

THE FOUR SYSTEMS OF THE ENVIRONMENT

Source: R. O'Donoghue, Natal Parks Board, South Africa.



OHT 4

A. Mustapha Tolba, the Director-General of UNEP

Poverty is locking the people of the Third World into a dismal cycle of events; in their efforts merely to meet needs of food shelter and heat, they are being forced to destroy the very resources on which their future survival (and the future prosperity of all) depend.

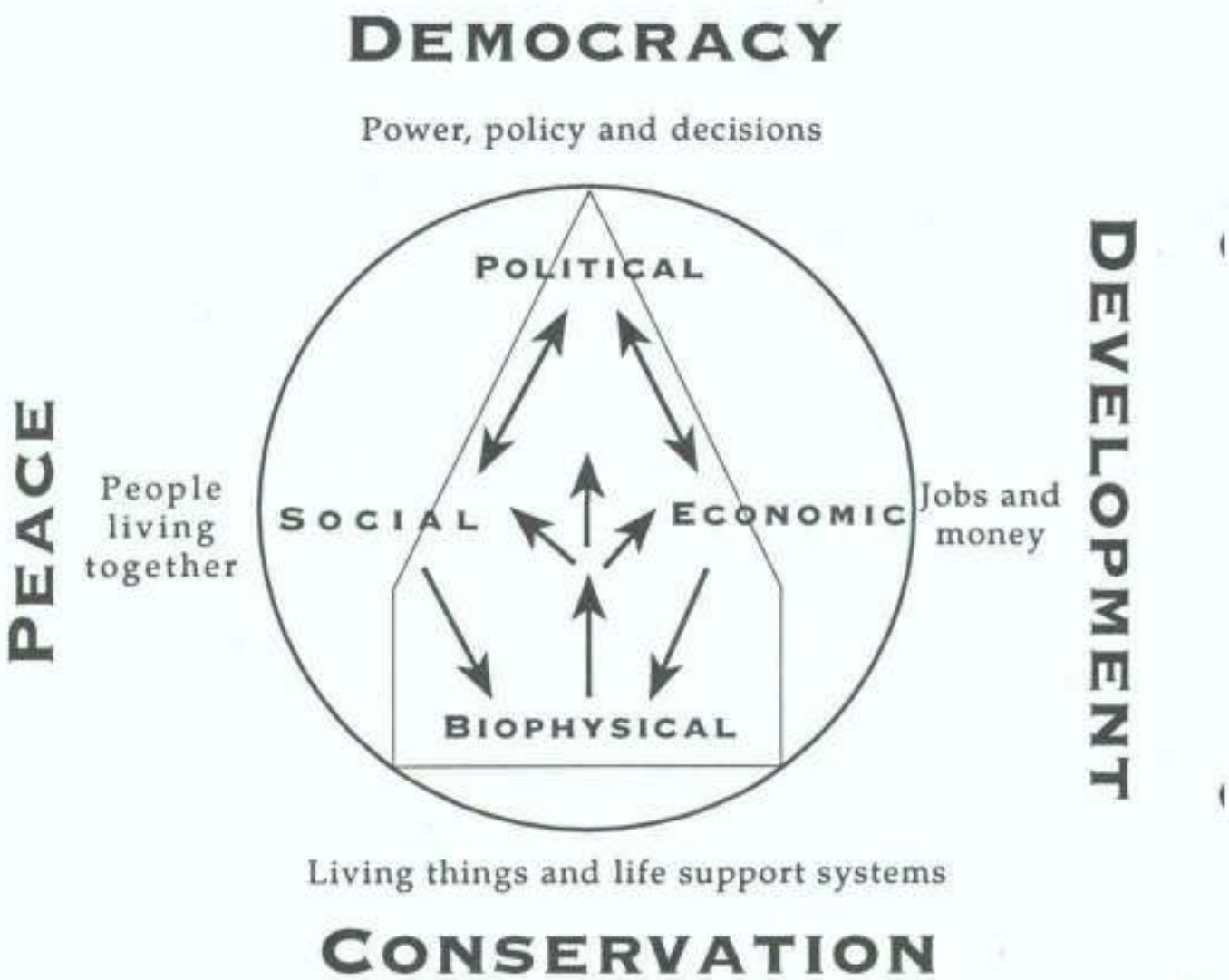
B. Pat Devlin from New Zealand

... it is much easier to be concerned about natural environments if you have a full stomach and some confidence that it will remain full! If your survival, safety or even comfort are under threat, then so too may environmental resolve become accordingly diluted. These issues in basic human rights and justice need to be resolved before any real progress will be made.

OHT 5

THE VALUES UNDERLYING A SUSTAINABLE ENVIRONMENT

Source: R. O'Donoghue, Natal Parks Board, South Africa.



OHT 6

The Role of Environmental Education from 'Agenda 21'

Source: UNCED (1992) *Agenda 21*, Chapter 36, p. 2.

Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues.... It is critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making.

OHT 7

AIMS

1. AWARENESS, knowledge and understanding

2. ATTITUDES and personal lifestyle decisions

3. ACTION for a better environment

OHT 8

Definitions of Environmental Education

Definition 1

Environmental education is an across-the-curriculum approach to learning which helps individuals and groups to understand the environment with the ultimate aim of developing caring and committed attitudes that will foster the desire and ability to act responsibly in the environment. Environmental education is concerned not only with knowledge, but also with feelings, attitudes, skills and social action.

Australian Association for Environmental Education

Definition 2

Environmental education is the preparation of people for their lives as members of the biosphere. It is learning to understand, appreciate, work with, and sustain environmental systems in their totality... Environmental education is fundamentally education in problem-solving - but problem-solving from a philosophical basis of holism, sustainability, enhancement, and stewardship... The goal is not just to solve a problem with a narrow focus that makes another problem worse,... (n)ot just to make a correction and restore the status quo, but to make things better.

Meadows (1990, p. 5)

OHT 9

THREE APPROACHES TO ENVIRONMENTAL EDUCATION

Education *about* the environment

- Provides understanding of how natural systems work
- Provides understanding of the impact of human activities upon them
- Develops environmental investigation and thinking skills

Education *in* the environment

- Gives reality, relevance and practical experience to learning through direct contact with the environment
- Develops important skills for data gathering and field investigations
- Develops aesthetic appreciation
- Fosters environmental awareness and concern

Education *for* the environment

- Builds on education *in* and *about* the environment
- Develops an informed concern and sense of responsibility for the environment
- Develops an environmental ethic
- Develops the motivation and skills to participate in environmental improvement
- Promotes a willingness and ability to adopt lifestyles compatible with the wise use of environmental resources

OHT'S

OHT 10

THE ULTIMATE GOALS OF ENVIRONMENTAL EDUCATION

Source: Adapted from Sterling, S. (1992) *Good Earth-Keeping: Education, Training and Awareness for a Sustainable Future*, Development, Education and Training Group, London.

- to enable people to understand the interdependence of all life on this planet, and the repercussions that their actions and decisions may have both now and in the future on resources, on the global community as well as their local one, and on the total environment.

- to increase people's awareness of the economic, political, social, cultural, technological and environmental forces which foster or impede sustainable development.

- to develop people's awareness, competence, attitudes and values, enabling them to be effectively involved in sustainable development at local, national and international levels, and helping them to work towards a more equitable and sustainable future.

OHT's

OHT 11

Objectives of Environmental Education

Source: Adapted from UNESCO-UNEP (1978) The Tbilisi Declaration, *Connect*, III(1), p. 3; and UNESCO and Australian Association for Environmental Education (1993) *Final Report of UNESCO Asia-Pacific Region on Overcoming the Barriers to Environmental Education Through Teacher Education*, Griffith University, 5-9 July, p. 34.

Awareness	to help social groups and individuals acquire an awareness and sensitivity to the total environment and issues, questions and problems related to environment and development.
Knowledge	to help individuals, groups and societies gain a variety of experience in, and acquire a basic understanding of what is required to create and maintain a sustainable environment.
Attitudes	to help individuals, groups and societies acquire a set of values and feelings of concern for the environment, and motivation for actively participating in environmental improvement and protection.
Skills	to help individuals, groups and societies acquire the skills for identifying, anticipating, preventing and solving environmental problems.
Participation	to provide individuals, groups and societies with an opportunity and the motivation to be actively involved at all levels in working toward creating a sustainable environment.

OHT's

OHT 12

EDUCATION *FOR* THE ENVIRONMENT

Source: Huckle, J. (1983) Environmental Education, in J. Huckle (ed.), *Geographical Education: Reflection and Action*, Oxford University Press, Oxford, p. 100.

Only education *for* the environment offers teachers the theory and practice with which to make a genuine contribution to environmental well-being, and this requires an acknoweledgment of the links between environmental, moral and political education.

RESOURCE 1

WORLDWIDE CONCERN ABOUT THE ENVIRONMENT

Source: *Our Planet*, 1(2/3), 1990, pp. 14-15.

The first worldwide survey on the environment shows that developed and developing countries alike have high levels of concern about the quality of their environment and skepticism of their leaders' ability to improve or control it.

The survey, conducted for the United Nations Environment Programme (UNEP), by Louis Harris and Associates, measures public opinion and leadership attitudes in 14 nations on four continents and is by far the most comprehensive study ever of environmental attitudes.

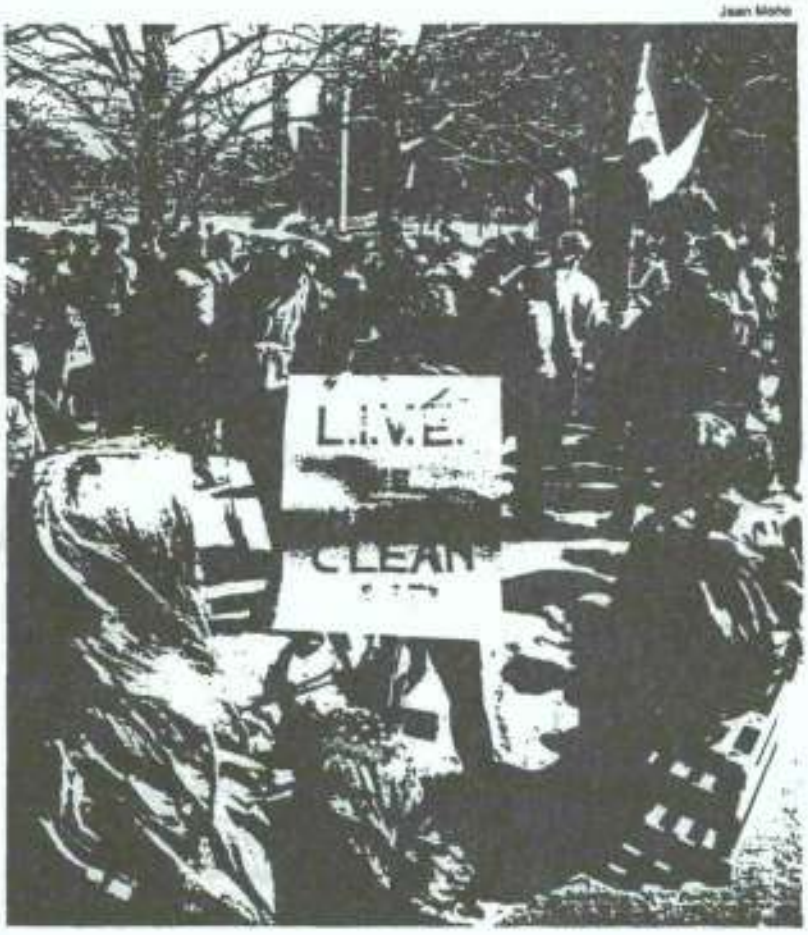
The poll found that most people and most leaders in the 14 nations surveyed are pessimistic about both the five-year and 50-year outlook for the environment. But, they believe the trend could be reversed if protecting the environment became a major national and international priority.

Very large majorities -- between 75 and 100 percent of both the public and the leaders in all 14 countries -- agreed on the need for stronger action by their governments, stronger action by international organizations such as the United Nations, and stronger laws to contain industrial pollution.

The countries included in the survey were Argentina, China, Hungary, India, Jamaica, Japan, Kenya, Mexico, Nigeria, Norway, Saudi Arabia, Senegal, West Germany and Zimbabwe. Interviews for the survey were conducted between February and June 1988.

"At the United Nations Environment Programme we are very encouraged to see the strength and the depth of support for both national and multinational environment programmes," said Dr. Mostafa Tolba, UNEP's Executive Director. "We have a clear mandate for our work. I hope the survey will be seen as a call to action."

Jean Mohr



Rich and poor alike

"What is remarkable about the survey," said Louis Harris, Chairman of Louis Harris and Associates, "is that the alarm about deterioration of the environment and support for much tougher environmental programmes are not confined to the western countries, but they are found in the East and West, in the South and the North, and in the rich and the poor countries of the world."

The survey found that most people in 13 of the 14 nations surveyed rated their environment as only "fair" or "poor". Only in Saudi Arabia did a majority of the public describe their environment as "excellent" or "pretty good". Leaders in 11 of the 14 countries rated their environment as fair or poor. Those in Zimbabwe, Saudi Arabia, and Norway rated their environments as excellent or pretty good.

"Leaders", for the purposes of the survey, comprised elected and appointed government officials, civil servants, news media, religious, trade union, and professional medical individuals.

In each nation, surveys were conducted with a cross-section of between 300 to 1,000 persons aged 16 and above and a separate sample of 50 "leaders". The same questionnaire, translated into local languages, was used for each nation and for both the public and leader samples.

In most developing countries the sample of the public was limited to

major metropolitan areas and urban centres because of the impracticality of surveying rural populations there. In Saudi Arabia the sample was limited to men, reflecting the different status of women in that nation and their inability to vote.

Other findings

Among the survey's other findings :

- Majorities or pluralities of the public and leaders in all of the countries surveyed except Saudi Arabia, believed their environments had become worse in the past ten years.

- Large majorities of both the public and leaders in all nations believed there was a direct link between the quality of the environment and public health.

- Younger people showed more concern for the environment -- and the link with public health -- than older people, and younger people and women expressed more concern about the future than older people or men.

- Very high levels of anxiety and concern were expressed almost everywhere about the pollution of drinking water, of rivers and lakes, of the air and of the land.

- Sizeable majorities in almost all countries also expressed grave concern about the loss of agricultural land, the cutting down of trees and forests, radioactivity, desertification, toxic wastes, and acid rain.

- But, there was less awareness of -- and less concern about -- climatic change such as that attributable to the greenhouse effect, or the shrinking ozone layer.

Only tiny minorities in any nation surveyed believed their environmental laws were too strict. And majorities of the public in all the countries surveyed, except Nigeria -- and of leaders everywhere, except in Nigeria and Zimbabwe -- said they would choose a situation with a lower standard of living and less risks to health over one with a higher standard of living with more health risks.

"Somewhat higher taxes"

Majorities of both the public and leaders in all countries said they would be willing to pay somewhat higher taxes to the government if they knew the money would be spent to protect the environment. In most countries these majorities were two-to-one or three-to-one.

Japan was the only nation where less than a majority of the public said they would be willing to spend two hours a week working on environmental projects or help by contributing money. But 77 per cent of that nation's leaders said they would be willing to do that.

The urgency of the overall global environmental problem was perhaps best shown by the majorities of the public in 13 of the 14 nations agreeing with the statement that: "Unless something urgent is done about controlling the environment in the world, the land will become desert, the oceans will flood over on to the land, and the earth will hardly be fit for human life."

Only in Saudi Arabia did a majority disagree with that statement.

The Harris organization intends to conduct similar surveys in 1989 in several other nations, including the United States, Brazil, the Soviet Union, the United Kingdom, France and Egypt.

Similar findings in the U.S.

A shorter version of the Harris poll conducted for UNEP earlier this year in the U.S. showed the American public not only believes its environment is in bad shape, but that it is also getting worse. Almost 97 per cent of Americans surveyed think their country should be doing more "to protect the environment and curb pollution." A majority are also willing to pay more for a cleaner environment.

Those most exposed to industrial pollution, particularly East and West coast residents, are most pessimistic about the state of the environment. Older Americans, who can remember the nation before the onslaught of superhighways, acid rain and contaminated water, take a much dimmer view than the younger generation which has never known such times.

The level of concern about safe drinking water among the American public is higher than the concern



expressed by others in industrial nations. Despite all the recent media coverage of the "greenhouse effect", global climate change placed last on the list, suggesting how relatively remote the danger from this less tangible problem seems to the public.

Other surveys

High levels of public concern about environmental protection have been reported by other surveys in North America and the European Community. These include the 1986 European Omnibus Survey published by the Commission of the European Communities; the October 1988 Gallup poll in the UK for *The Daily Telegraph*; surveys in the U.S. by Louis Harris in April 1986 and February 1989, and by Cambridge Reports in 1989; and polls conducted in Canada last year by Environics Research Group and Angus Reid Associates.

The major concerns of the public both in Europe and North America were air and water pollution and waste disposal, followed by extinction of species and depletion of natural resources. Majorities did not believe that the authorities were doing enough to protect the environment, and most of those polled would favour increased government regulation and spending, even if it meant higher taxes or prices, to control environmental degradation. In the U.K. and Canada, a majority said preservation of the environment should take precedence over economic growth, and sizeable proportions of the public in the European Community, and the U.S. were already engaged in various actions to protect the environment. ■

RESOURCE 2

THE 'EC' GAME

Find someone who:

A. .... has visited a nature reserve, or other natural area in the last month. Which one?
B. .... knows the name of their national Minister for the Environment. Who?
C. .... is a member of an environmental group. Which one?
D. .... works as a volunteer for a community group. Which one?
E. .... knows the title of the 1987 UN report on environment and development. Title?
F. .... has a favourite environmental hero/heroine. Who?
G. .... travels to work/school by any method except private car. How?
H. .... has a garden of mainly native species. What plants?
I. .... does not allow chemical poisons to be used on his/her property. Since when?
J. .... recycles two of the following: paper, cans and bottles. Which two?
K. .... has written a Letter to the Editor on an environmental issue that affects him/her directly. Which one?
L. .... has spoken or written to an official about a local environmental issue. Which one?
M. .... can name a local environmental issue that affects him/her directly. Which one?
N. .... practises energy conservation in their home. How?
O. .... has a favourite place to go to when he/she needs 'regenerating'. Where?
P. .... can name a global environmental problem that affects him/her directly. Which one?

A. Name: Which one?	B. Name: Who?	C. Name: Which one?	D. Name: Which one?
E. Name: Title?	F. Name: Who?	G. Name: How?	H. Name: What plants?
I. Name: Since when?	J. Name: Which two?	K. Name: Which one?	L. Name: Which one?
M. Name: Which one?	N. Name: How?	O. Name: Where?	P. Name: Which one?

RESOURCE 3

WINDOWS ON SEVEN LESSONS

Source: Adapted from Fien, J. (1988) *Australian Environment*, Bicentennial Australian Studies Schools Project, Bulletin 6, Curriculum Development Centre, Canberra, pp. 14-15.

INSTRUCTIONS

1. Read the descriptions of the seven environmental education lessons that follow.
2. How do the lessons you have imagined and discussed relate to these lessons?
3. Which of the seven lessons would you most like to teach? Why?
4. Are any of the seven lessons not really 'good' environmental education? Why?
5. How do the lessons contribute to students learning for a sustainable environment?
6. Classify the seven lessons according to how they fit into the categories of education *about*, *in* and *for* the environment.

1 The students in this class have just finished watching a video on the archaeological and biological heritage of the forests not too far from their school which are the centre of a dispute. The students have already analysed a selection of newspaper cuttings which have outlined: the desire of woodchip companies to log the area, the government's position, the views of indigenous people who live in the forest, and The Conservation Society's proposals. The students are preparing for a visit in their next double lesson by a representative of these four groups who will present their views and be questioned by students. The students are preparing the questions that they are going to ask.

2 This classroom is empty because the class is away on a camp. It is now night and we find the participants in a long line walking along a bush trail with torches on an animal spotting expedition. That afternoon their teacher led them through a discussion of whether it was right or wrong to spotlight small animals in the interest of 'science'. Never having been in the forest at night and expecting adventure, most of the class decided to go on the expedition despite some reservations. However three participants have decided to stay back at the camp with one of the parent-helpers to make a hot drink for the class on its return.

3 This classroom is very noisy. Participants are at the end of a four week study of industrial pollution and are presenting their findings in the form of a simulated Senate Inquiry. The teacher has just announced the 'news' that the government has decided to enforce heavy fines on air and water polluters. The noise is from a group of 'concerned local residents' who are in uproar about the lost job opportunities for their economically depressed area if some factories have to close.

4 In this classroom, students are reading a Department of Agriculture booklet on soil conservation. Their teacher has asked them to make a list of five methods farmers can use to reduce soil losses, but in one back corner of the room, a small group of students has become diverted from the main task. They are fascinated by a diagram on page three of the booklet which shows that every 680 gram loaf of bread they buy costs 7 kilograms of soil lost through soil erosion. One of them has decided to find out if any other food items she eats are so environmentally costly, but does not know where to start.

5 This classroom is empty. Having learnt something of the historical growth of their town, participants are turning their attention to the future planning of their area. They have gone in groups to the public library, the town hall, and the offices of Acme Pty Ltd. Another group is surveying community attitudes at a shopping centre. The class is divided in opinion about Acme's plans to redevelop 40 hectares of recently purchased local farmland into an industrial estate. So, the class is researching the issue with the purpose of submitting letters to the planning department and Acme Pty Ltd stating their views supported by the results of their surveys.

6 This classroom is a science laboratory. The class has 'harvested' a metre square quadrat of grass cover from a special study plot by the river near the school and are now preparing to dry and weigh the last six month's growth. This is the summer growth and they will be comparing their results with the data they obtained when they harvested the spring growth. The aim of their research is to evaluate the success or otherwise of the riverbank restoration and revegetation project that the school has been working on for the last three years with the support of the local council.

7 There is mess everywhere in the last classroom with leaves, grass clippings, stones, a few drink cans, scraps of plastic, chart paper and glue pots on every desk - and all over the floor. It is an art room and the participants know that they have to clean up before they go to lunch. Their task today is to create a collage from materials available in the school grounds to express their views about the way people treat the environment.

READING 1

ENVIRONMENTAL EDUCATION FOR A SUSTAINABLE ENVIRONMENT

The purpose of this paper is to provide an introduction to the definitions, aims and objectives of environmental in relation to the goals of providing the awareness, knowledge, attitudes and skills which can empower individuals, groups and societies to become actively involved in working towards creating a sustainable environment. Thus, the paper is based upon a particular view of environmental education which emphasises values and citizenship goals. When reading the paper, readers should be mindful of the argument by Grant and Zeichner (1984) that educational processes are not neutral activities and judge the ideas presented in this light:

> *There is no such thing as a neutral educational activity. Any action that takes place (for example) in the classroom is necessarily linked to the external economic, political and social order in either a primarily integrative or a creative fashion. Either a teaching activity serves to integrate children (and other learners) into the current social order or it provides children with the knowledge, attitudes or skills to deal critically and creatively with that reality in order to improve it. In any case, all teaching (and learning) is embedded in an ideological background, and one cannot fully understand the significance or consequence of an activity unless one also considers that activity in light of the more general issues of social continuity and change* (p. 15).

The value position guiding this paper promotes a critical perspective on various aspects of environmental education, including: the nature of the 'environment', the transformation in social values necessary to resolve environmental problems, and the role of education in the transformation towards a sustainable environment.

First, this paper is based upon a view of 'environment' that sees it as not just nature or biophysical systems alone, but as a 'totality' that results from the interactions of social, economic and political systems with biophysical systems as people variously extract, utilise and manage natural and social resources to satisfy their needs and wants.

Second, this paper is based upon a belief that environmental problems cannot be understood without reference to the social, economic and political values of the societies in which they occur and that, as a result, the management of what might be called the current environmental crisis depends upon changes to human values concerning the environment.

Third, this paper argues that the fundamental goal of environmental education is the creation of sustainable environments in which people can live and work. A sustainable environment is one in which the natural environment, economic development and social life are seen as mutually dependent - and the interaction between them contributes to the sustainability and enhancement of the quality of people's lives and the natural environment.

While there is much debate around the world about the means and mechanisms for achieving this transition, there seems to be *wide agreement that education has an important role to play in transforming values and empowering individuals and groups to participate in environmental improvement and protection.*

This important role for environmental education was stressed in some of the major international reports on environmental problems in recent years. For example, the World Commission on Environment and Development (1987) argued that 'the world's teachers ... have a crucial role to play' in helping to bring about 'the extensive social changes' needed for socially and ecologically sustainable environments (p. xiv). Likewise, the World Conservation Strategy was quite explicit about the role of education in bringing about changes in social values when it argued that:

> *Ultimately, the behaviour of entire societies towards the biosphere must be transformed if the achievement of conservation objectives is to be assured. A new ethic, embracing plants and animals as well as people is required for human societies to live in harmony with the natural world on which they depend for survival and wellbeing. The long term task of environmental education is to foster or reinforce attitudes and behaviours compatible with this new ethic* (IUCN, UNEP, WWF, 1980, Section 13).

This message was repeated in *Caring for the Earth: A Strategy for Sustainable Living* which was prepared as the World Conservation Strategy for the 1990s (IUCN, UNEP and WWF, 1991). *Caring for the Earth* argues that education has a vital role to play in ensuring that people learn, accept and live by the principle that 'living sustainably depends on accepting a duty to seek harmony with other people and with nature' (p. 8):

> *Sustainable living must be the new pattern for all levels: individuals, communities, nations and the world. To adopt the new pattern will require a significant change in the attitudes and practices of many people. We will need to ensure that education programmes reflect the importance of an ethic for living sustainably* (IUCN, UNEP and WWF, 1991, p. 5).

Agenda 21 is the internationally agreed report of the United Nations Conference on Environment and Development or 'Earth Summit' which was held in Rio de Janeiro in June 1992 . In devoting a whole chapter to the role of environmental education in relation to sustainability, *Agenda 21* states that:

> *Education is critical for promoting sustainable development and improving the capacity of the people to address environ-*

ment and development issues.... It is critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making (UNCED, 1992, Chapter 36, p. 2).

However, environmental education takes many forms and the various knowledge, skill and affective objectives often receive different degrees of emphasis. Three broad, but overlapping, conceptions of environmental education exist: education *in* the environment, education *about* the environment and education *for* the environment.

Education in the environment

Experience in the environment - be it a city street, a farm, a rural village, a beach, a park, or a forest - can be used to give reality, relevance and practical experience to learning. Increased awareness of aspects of the environment can be expected from any opportunities for direct contact with the environment. Opportunities to learn out-of doors can also be used to develop important skills for data gathering such as observation, sketching, photography, interviewing, and using scientific instruments, and social skills such as group work, cooperation and aesthetic appreciation. Environmental awareness and concern can also be fostered by linking learning to direct experiences in the environment and allowing learners to become captivated by the complexity and wonder of natural systems or immersed in the values conflict over particular environmental issues.

Education *about* the environment

However, such feelings of concern are not enough if living responsibly and sustainably in the environment is an educational goal. Concern needs to be translated into appropriate behaviour patterns and actions, but for this to happen, it is essential for learners to understand how natural systems work and the impact of human activities upon them. This will include learning about political, economic and socio-cultural factors as well as about the ecological ones that influence decisions about how to most responsibly use the environment. Knowledge about the environment is essential if all citizens are to participate in any informed debate aimed at resolving local, national and global environmental issues. There is much that many non-formal avenues of environmental education, as well as formal curriculum areas, including the arts and the natural and social sciences, can contribute to providing such knowledge.

Education *for* the environment

Education *for* the environment aims to promote a willingness and ability to adopt lifestyles that are compatible with the wise use of environmental resources. In so doing, it builds on education *in* and *about* the environment to help develop an informed concern and sense of responsibility for the environment through the development of an environmental ethic and the motivation and skills necessary to participate in environmental improvement. The UNESCO-UNEP International Environmental Education Programme has stressed that environmental education needs to be based upon a search for answers to a number of critical questions if it is to achieve these important citizenship goals:

> *As decisions regarding the development of society and the lot of individuals are based upon considerations, usually implicit, concerning what is useful, good, beautiful, and so on, the educated individual should be in a position to ask such questions as: Who took this decision? According to what criteria? With what immediate ends in mind? Have long-term consequences been calculated? In short, he (sic) must know what choices have been made and what value-system determined them* (UNESCO, 1980, p. 27).

Reflection on the relative strengths and weaknesses of these three approaches to environmental education in relation to the values transformation necessary to promote sustainable and socially just lifestyle choices has led many environmental educators to argue that it is only when the real intention is education *for* the environment that *real* environmental education is actually taking place. Thus, education in and *about* the environment are valuable only in so far as they are used to provide skills and knowledge to support education *for* the environment.

According to Stevenson (1987), education *for* the environment involves engaging students in:

> *... the intellectual tasks of critical appraisal of environmental (and political) situations and the formulation of a moral code concerning such issues, as well as the development of a commitment to act on one's values by providing opportunities to participate actively in environmental improvement* (p. 69).

This education *for* the environment approach to environmental education is reflected in the UNESCO-UNEP International Environmental Education Programme. According to all the reports and documents of this programme, the goals and objectives of environmental education should be directed primarily towards helping students develop values and actions which support the protection and improvement of the environment.

Thus, the goals of environmental education have been described as:

- to foster clear awareness of, and concern about, economic, social, political and economic interdependence at local, regional, national and international/global levels;
- to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment; (and)
- to develop and reinforce new patterns of environmentally sensitive behaviour among individuals, groups and society as a whole for a sustainable environment.

(adapted from UNESCO-UNEP, 1978, p. 3; and UNESCO and Australian Association for Environmental Education 1993, p. 34).

The British Environment, Development, Education and Training Group's report *Good Earth-Keeping: Education, Training and Awareness for a Sustainable Future* has such

goals in the light of contemporary thinking on the role of environmental education in promoting a sustainable environment. This groups calls this 'education for sustainability':

> *We believe that education for sustainability is a process which is relevant to all people, and that, like sustainable development itself, it is a process rather than a fixed goal. It may precede - and it will always accompany - the building of relationships between individuals, groups and their environment...*
>
> *We argue here that education for sustainability is a process which:*
>
> - *enables people to understand the interdependence of all life on this planet, and the repercussions that their actions and decisions may have both now and in the future on resources, on the global community as well as their local one, and on the total environment.*
> - *increases people's awareness of the economic, political, social, cultural, technological and environmental forces which foster or impede sustainable development.*
> - *develops people's awareness, competence, attitudes and values, enabling them to be effectively involved in sustainable development at local, national and international level, and helping them to work towards a more equitable and sustainable future. In particular, it enables people to integrate environmental and economic decision-making.*
> - *affirms the validity of the different approaches contributed by environmental education, and development education and the need for the further development and integration of the concepts of sustainability in these and other related cross-disciplinary educational approaches, as well as in established disciplines* (Sterling/EDET Group 1992, p. 2).

Five interrelated categories of objectives may be proposed to foster these goals:

Awareness: to help social groups and individuals acquire an awareness and sensitivity to the total environment and issues, questions and problems related to environment and development.

Knowledge: to help individuals, groups and societies gain a variety of experience in, and acquire a basic understanding of what is required to create and maintain a sustainable environment.

Attitudes: to help individuals, groups and societies acquire a set of values and feelings of concern for the environment, and motivation for actively participating in environmental improvement and protection.

Skills: to help individuals, groups and societies acquire the skills for identifying, anticipating, preventing and solving environmental problems.

Participation: to provide individuals, groups and societies with an opportunity and the motivation to be actively involved at all levels in working toward creating a sustainable environment

(adapted from UNESCO-UNEP, 1978, p. 3; and UNESCO and Australian Association for Environmental Education, 1993, p. 34).

Education *for* the environment thus stands in contrast with education *about* and *in/from* the environment which, through their strong content and field experience orientations, address only a limited number of these objectives. In contrast with education *about* and *in/from* the environment, education *for* the environment focuses on students working individually and in groups towards the resolution of environmental questions, issues and problems. Within the formal education sector of environmental education, this involves many non-traditional approaches to teaching and learning, including what the World Commission on Environment and Development (1987) described as the active 'involvement of students in the movement for a better environment' (p. 114).

Thus, Stevenson (1987) defines education *for* the environment as a process of :

> *... inquiry and action on real environmental issues. Such an inquiry process demands that students actively engage in critical or complex thinking about real problems. The development of knowledge, skills and values is not only directed towards action, but emerges in the context of preparing for (i.e. the inquiry) and taking action.... A function of knowledge in environmental education is immediate use for the social value of a sustainable and emancipated quality of life* (p.75).

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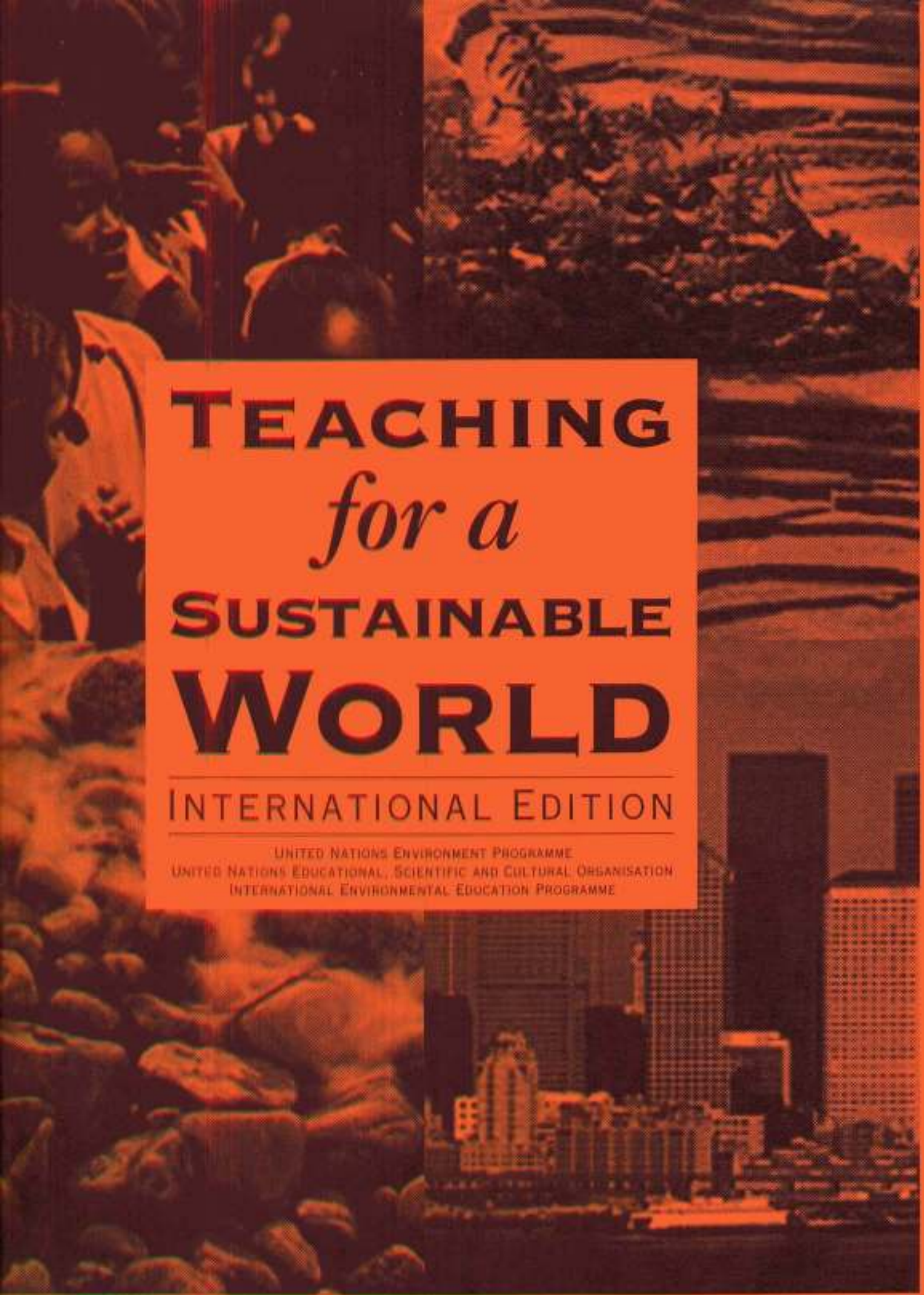
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MODULE 3

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP

AusAID

INTRODUCTION *to* DEVELOPMENT EDUCATION

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INTRODUCTION

This workshop is one of the core modules in this series and provides an introduction to the nature, concerns and objectives of development education.

For the survival of the world and its people, teachers must do far more than just teach about global issues. We must find ways to change hearts and minds. This can be a response to reasoned argument and evidence or to experience where empathy will lead to commitment and action. Teachers hold the responsibility for educating their participants to work for future change that will help create a better world for all. Together we must work towards a more ecologically sustainable and socially just society, locally, nationally and globally.

The workshop shows that development education is not just about the economically poor world but is concerned with all countries, including the economically rich ones, particularly in relation to their role in an interdependent world.

OUTCOMES

This workshop seeks to enable participants to:

- understand and discuss what is involved in development education;
- appreciate the links between development education and environmental education; and
- help them realise that the process of learning is as equally important as the content.

WORKSHOP OUTLINE

The workshop has seven components:

1. Icebreaker: Introducing Development

An activity that allows participants to introduce themselves and explore their ideas on the meaning of development.

2. The Meaning of Development Education

This activity involves participants reading stimulus material followed by a group discussion.

3. Mini-lecture

A discussion of the history of the term 'Development Education', the present day focus and objectives.

4. Fitting it all Together

This activity involves group development of posters illustrating the links between different approaches to education and their shared global concerns.

5. Looking in a Classroom

An activity to assist participants' ability to incorporate a development education perspective into their classroom teaching.

6. Summing Up

Involves reflection on social justice, inequalities and their professional practice.

MATERIALS REQUIRED

A) Provided

Overhead transparency masters

OHT 1: Overview of Mini-lecture

OHT 2: What is Development?

OHT 3: Definition of Development Education

OHT 4: Development Education Could Be...

OHT 5: Five Education Approaches or One?

Resources

Resource 1: Chris and Kweku

Resource 2: Balance Sheet of Human Development - Developing Countries

Resource 3: Balance Sheet of Human Development - Industrial Countries

Resource 4: Objectives for Development Education

Resource 5: Scope of Development Education

Resource 6: Examples of Development Education

Readings

Reading 1: What is Development Education?

Reading 2: The Hidden Curriculum and Development Education

B) To Obtain

Activity 4: Several photocopies of OHT 5, blank paper, envelopes, sheets of coloured paper, felt pens and paste.

ADDITIONAL READING

Baird, B. (1994) The Arms Trade, *The New Internationalist*, No 261, November, pp. 18-19.

Brazier, C. (ed.) (1992) Development: A Guide to the Ruins, *The New Internationalist*, No 232, June (whole issue).

Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom. Book 1 Teacher's Notes* and *Book 2 Student Activities*, AGPS/AIDAB, Canberra.

Pike, G. and Selby, D. (1988) *Global Teacher Global Learner*, Hodder and Stoughton, London.

Rajendra, C. (1984) *Songs for the Unsung*, World Council of Churches, Risk Press, Geneva.

Swift, R. (ed.) (1995) Unmasked: The East Asian Economic Miracle, *The New Internationalist*, No 263, January (whole issue).

UNICEF (1995) *State of the World's Children*, Oxford University Press, London.

United National Development Programme (1993) *Human Development Report 1993*, UNDP, New York.

ACTIVITIES

1. ICEBREAKER: INTRODUCING DEVELOPMENT

This activity provides an opportunity for participants to meet each other and to discuss in groups of three their understanding of the term development as it applies to various themes.

- Ask participants to break up into groups of three and call themselves A, B or C.
- Ask the groups to introduce themselves by name and to give a synonym, a phrase, or a comment on the term development as it relates to a particular theme chosen by the facilitator. The groups stay together and discuss the term for 3-4 minutes.
- Ask the groups to reform - Bs stay where they are, As move clockwise and Cs move anti-clockwise to make new groups. They continue this pattern until the participants have met and discussed with as many as possible in the time available (say 15 minutes).

  The facilitator can suggest themes for discussion of the term 'development', changing this each time the groups reform. Suggested themes are 'development' as it applies to:

  - children
  - their own country
  - countries of the South
  - indigenous peoples.

  Other themes could be development as it applies to:

  - their local area
  - economically rich countries
  - elites
  - power groups, etc.
- For the final triad, the group could explore the question:
  - What do the people in this group most strongly associate with the term 'development'?

Optional: Ask the groups to report back on their particular view of 'development'.

Apart from a chance to introduce themselves, this activity gives participants confidence to speak and explore ideas. It also is a way of brainstorming prior to the mini-lecture which will further develop ideas of "What is "development"?" The facilitator should move around acting as a listener, tuning in to some of the ideas of the participants so these can be used in the mini-lecture to emphasise the sound educational principle of starting with the knowledge and ideas of the group.

The facilitator can choose themes relevant to the particular group involved, to the local situation, or to what they wish to discuss later. For the first two triads the participants 'throw-in' many ideas and accept all suggestions, i.e. brainstorming.

The last triad enables each group to report back to the whole group at the end of or during the mini-lecture. The last group needs to discuss and negotiate to see if they can come up with a consensus opinion. There may be groups who cannot reach a consensus about the term 'development'. The opportunity to state this, and say why, is an important part of the process, as it allows the facilitator to expand on the idea that 'development' means many different things, depending on one's point of view, position in society, etc.

The June 1992 issue of *New Internationalist*, Development: A Guide to the Ruins, contains illustrative material the facilitator can use to reinforce concepts as they are raised (see Additional Reading).

2. The Meaning of Development Education

This activity is a group discussion following the reading and questioning of stories, or other stimulus material. It provides an opportunity for participants to begin discussing the meaning and value of teaching with a development education perspective.

- Distribute a copy of Resource 1.

  Alternatively any stories, poems, photos, posters or cartoons that would stimulate discussion could be used. These can be obtained from aid agencies, UNEP, UNICEF, UNESCO, etc. Relevant local poems which have a social justice or environmental/development emphasis (e.g. poems by Cecil Rajendra of Malaysia) would be very useful. The workshop facilitator should select ones most suitable for their group. It maybe useful to have visual stimulus, e.g. a poster as well as a story or poem.
- The stimulus material is shown or read out by participants or the facilitator. After hearing a story each participant writes down questions they would like answered. The emphasis here is on quickly writing questions - they may start off with very simple questions, i.e. What is the home country of the person writing this? Once questions flow they will find they get deeper. After a few minutes, ask individuals to prioritize their questions, or mark the three most important.
- Groups of three participants then discuss these chosen questions and finally, through negotiation and sharing of ideas, they write out the three most interesting questions from their group.
- Ask groups to 'swap' their three questions with another group. Each group is given copies of the stories or stimulus material and they try and come up with answers to the questions asked. Finally the two groups come together and discuss the questions asked and answers suggested and also why some questions are difficult to answer.
- Bring the discussion together by getting groups to report back, or share one question they found interesting.

The emphasis in this activity is to get participants to discuss the various backgrounds of teachers and their students, what is meaningful to them, what influences them, what individuals see as the purpose of taking a development education perspective. This is a worthwhile exercise that should prompt discussion. Teachers and students often find it difficult to write questions rather than statements. Writing questions instead of immediately finding answers, stimulates us to think deeply, and in the discussion and questioning, the workshop members should find they discuss their own values in relation to development education and what it means. The final summing up by the facilitators should emphasise the dynamic nature of the term.

3. MINI-LECTURE

The mini-lecture should be developed from Readings 1 and 2. Resources 2-5 and OHTs 1-5 may be used also.

Points to be discussed in the lecture are on OHT 1. Support materials for each point are:

- different views of development (OHT 2; handout Resources 1-3);
- the history of development education (Reading 1);
- definition of development education (OHTs 3 and 4);
- objectives and scope of development education (handout Resources 4 and 5);
- links between development education and environmental, peace and political education (OHT 5); and
- power and political education because development education is about power and changing power structures (Reading 1).

4. FITTING IT ALL TOGETHER

In this activity small groups of participants, using given material, discuss and share ideas about development education. This creates an opportunity for participants to discuss particular education approaches that they may already be familiar with, and to show in diagrammatic form the links between them and their shared global concerns.

The facilitator needs to make photocopies of the diagram in OHT 5 for each small group. The diagram should be cut up into its six distinct parts : the globe and the five triangles depicting each 'education'. These cut outs should be put into an envelope with three or four triangles of blank paper the same size as the five triangles. The arrows should be omitted. A sheet of coloured paper, felt pens and paste should be available for each group. OHT 5 can be used at the end.

- Participants in groups or pairs are given an envelope. They take out the materials and discuss them in relation to points raised in the mini-lecture and introductory activity.
- They are then given the other materials and asked to arrange the contents of the envelope as a poster. They can add their own ideas by using the blank squares (e.g. 'values', 'anti-sexist education', 'anti-racist education', 'global education', etc. could be ones they may like to include). Arrows, lines, drawings and notes to give a particular message should be added with felt pens.
- Finally they add a title and display their poster, and talk with others about their ideas. The facilitator should help highlight key ideas.

Through arranging this material participants will be discussing the common concepts, organising ideas and major objectives of development education, environmental education and other educational thrusts. If they are encouraged to add further boxes they are likely to discuss language, race, gender, religion, family, etc. or a specific subject area they are interested in.

By allowing the participants to work through the concepts related to each approach given and devising concepts for new boxes it is hoped they will consider the five common concerns on the central globe of the many educational thrusts, and realise development education is not something new but a dynamic process and a perspective that is already in place in some schools.

The facilitator can draw out similarities and differences between the posters and the original OHT 5.

5. Looking in a Classroom

In this activity participants discuss different classroom activities and decide what it is that makes them examples of development education. It allows participants to link their understanding of development education to classrooms they have been in or read about and to curricula or subjects they teach.

The facilitator needs to make photocopies of Resource 6 for the group. Further examples can be typed up and added by the facilitator, especially ones relevant to their own country and the age-group the participants teach. Facilitators can make up the examples, or take ones from their own experience.

- Groups are given copies of Resource 6 and allocated 2-3 activities. Using ideas from the mini-lecture and previous activities they should quickly discuss why they consider their examples to be development education. An easy way to do this would be to underline key words or phrases relating to knowledge, skills, attitudes and action objectives and to the teaching methods used.
- Following this they could check their ideas against the list of objectives of development education (Resource 4).
- Groups share their examples and details of their discussion, with the facilitator checking off objectives as they are mentioned on an overhead.
- Finally the participants are asked to give examples from their experience or in the community that highlight other objectives of development education.
- OHT 4 could be used as a summary.

This activity should help participants see how teachers have incorporated a development education perspective into classroom teaching. It should also serve as a conclusion by linking all the material from the previous activities and the mini-lecture.

6. Summing Up: The Hidden Curriculum

Mini-lecture

Development education is not just about teaching content. It involves the use of many experiential teaching methods that model and promote the values of cooperation and tolerance that underlie a better world for all. This means that the 'hidden curriculum' is a vital area to monitor and use positively.

Reading 2 provides a range of ideas upon which a mini-lecture on the hidden curriculum can be based. Facilitators should make a selection from this material to conclude the workshop in such a way that it leaves participants to reflect on their professional practice and act for the betterment of all.

OHT's

OHT 1

Overview of Mini-lecture

- Different views of 'development'
- The history and changing nature of 'development education'
- Definition and scope of 'development education'
- Objectives of 'development education'
- Power and 'political education'

OHT 2

WHAT IS DEVELOPMENT?

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/ AIDAB, Canberra, p. 21.

Development is not only concerned with growth where more people enjoy economic or material well-being and the sharing of these benefits. To many people skyscrapers, highways, large-scale industries, hotels, supermarkets and hydro-electric schemes represent development. These are the physical manifestations of certain type of economic development where maximising profit is the driving force. Social development should start with the concept of the oneness of the world and the value of each individual rather than profit.

Development in human terms means social justice for all and encompasses political freedom. The process of development should enable all people to realise their potential — social, cultural, political and economic.

OHT's

OHT 3

Definition of Development Education

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/ AIDAB, Canberra, p.17.

Development education is a dynamic process

It is about *global concerns*; recognising that we live in an interdependent world. It aims to develop an understanding of the interacting factors that cause poverty, injustice, inhumanity, conflict and environmental abuse in our own country and internationally.

It is about the *powerful and the powerless* for it is concerned with how things happen, who decides, who has power and who does not. It promotes inquiry into prejudice and discrimination, such as racism and sexism.

It develops *critical awareness* of our own and other societies and cultures. It is a search for alternative views, experiences and methods that acknowledge equality of people within and between nations. It recognises the diversity and complexity of approaches in our world.

It is about *participation*; developing the skills, values and attitudes that lead to commitment to responsible action for change towards the preservation and fair distribution of the earth's resources in order to create a more just society, locally and globally.

OHT 4

DEVELOPMENT EDUCATION COULD BE...

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/ AIDAB, Canberra, p. 21.

Development education could be...

language and literature
environmental education
agricultural science
religious education
technical studies
outdoor education
modern languages
dance and drama
home economics
social studies
local studies
earth science
mathematics
photography
geography
economics
chemistry
biology
history
physics
music
craft
art

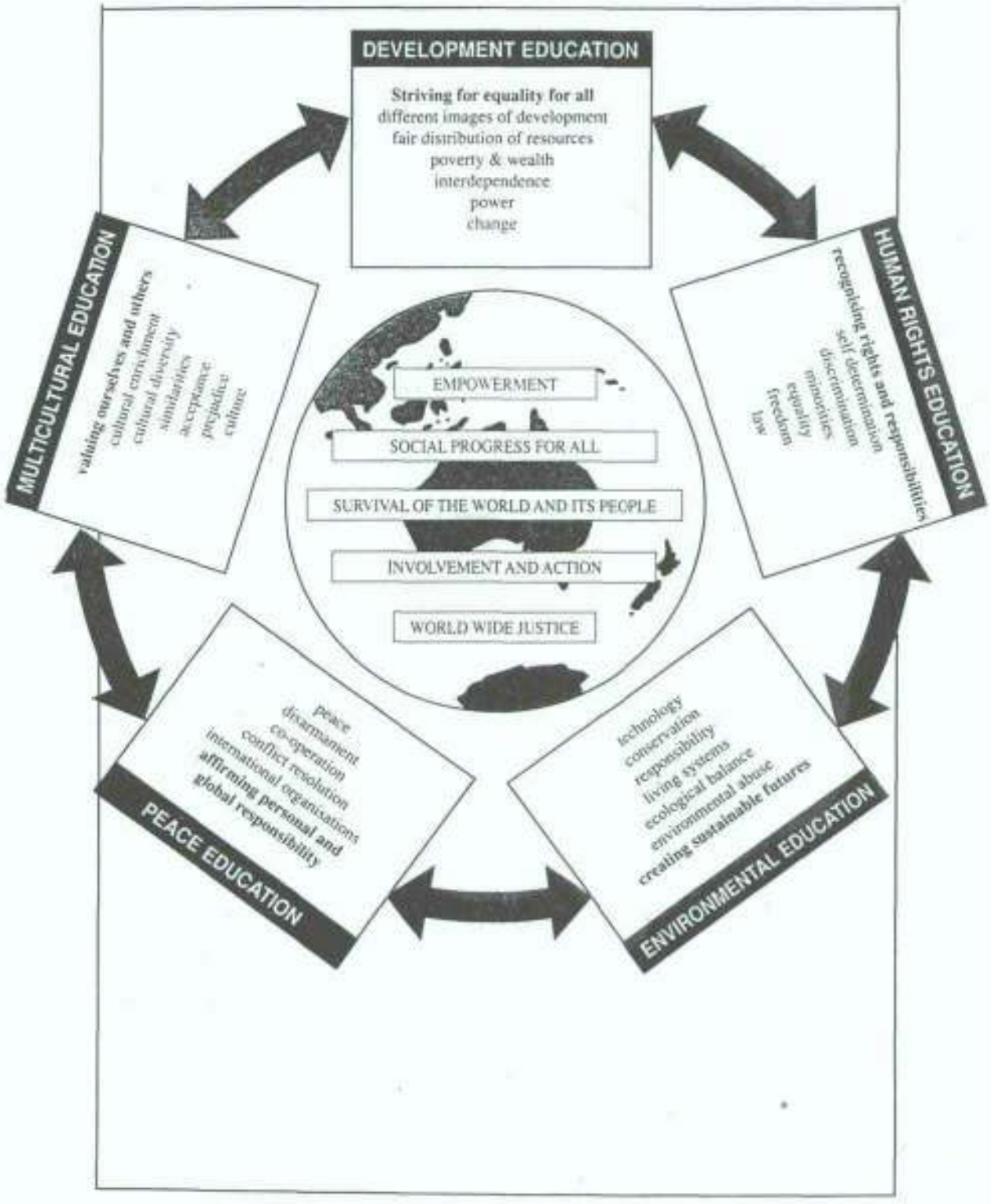
It depends on the perspective taken and the process that is used. So... it's all of these — and a lot more...

OHT'S

OHT 5

FIVE EDUCATION APPROACHES OR ONE?

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/AIDAB, Canberra, p. 16.



RESOURCE 1

CHRIS AND KWEKU

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/ AIDAB, Canberra, p.9.

My name is Chris. I am 10 years old. Our teacher gave us a story to read. It began 'My name is Kweku'. It was sad and it made me feel lonely. I wouldn't like to be like him, I feel sorry for Kweku, he has lived a hard life. I wish someone would help him soon because at nine he needs an education. If he had gone to school he could get a better job. I go to school. I will write my story.

My name is Chris I've got a house. My best fried is Keith and I go to Aldinga Primary School to learn. There's five of us in the family. I like playing on the computer on weekends or after 4.30. I've got $30 in my wallet. I get $2 every Friday.

My age is 10 and in Grade 5. My dad works at Nestles, and mum works around the house. I have over ten fluffy toys in my bedroom. I go to church usually on Sundays.

I play cricket and indoor games. I've got a pet called Monty he's only got three legs because he got run over by a motor bike and we took him to the vet to fix him up.

Mum and dad have two cars a job car and mums got her own. We haven't got a grandma any more.

We have got a big house and paddocks. I think we've got four paddocks. When I am sick I am looked after. I get food every day. I don't ever have to worry about running out of food I hardly ever be sick.

Keith and me and the rest of our class did a survey in maths to see what we had compared to Kweku. Me made a list of things to survey. We found that in the families that the twenty-two of us came from, we owned these things:

24 TVs	3 swimming pools	12 stereos
26 bikes	8 videos	13 trampolines
6 computers	3 pool tables	6 microwaves
53 transistors or Walkmen	10 dishwashers	24 pets
25 cars	1 horse	3 caravans
6 boats		

and between the twenty-two of us we get $51.50 pocket money per week.

I showed our survey to Mum and asked her why we have so much and Kweku has so little. She didn't know all the reasons. At school we are going to find out more about why this happens and what we can do

Chris Age 10
Aldinga Primary School, Australia

My name is Kweku

My name is Kweku. I am 9 years old. A lot of people call me a small boy, but I live alone. My work is that I sell chewing gum around the Orion Circle at cinema time. Plenty boys and girls come buy the 'PK' before they see cinema. I don't go to school. I don't go because I don't have money. My mother died before they born me. My father nobody know. Some woman give me milk when I am a little baby, now I am old so I work. I sleep in the far night at 2.00 am sometimes 3.00 am morning time. I have no sleeping house. I sleep at the lorry petrol station. I buy food they sell on road.

I want there to be no war and no children born like I am. I suffer plenty. You don't get soap, sugar and plenty plenty things. I want this year to bring house for us and water for village people to drink. Don't take photo of me. I don't want white man see me dirty.

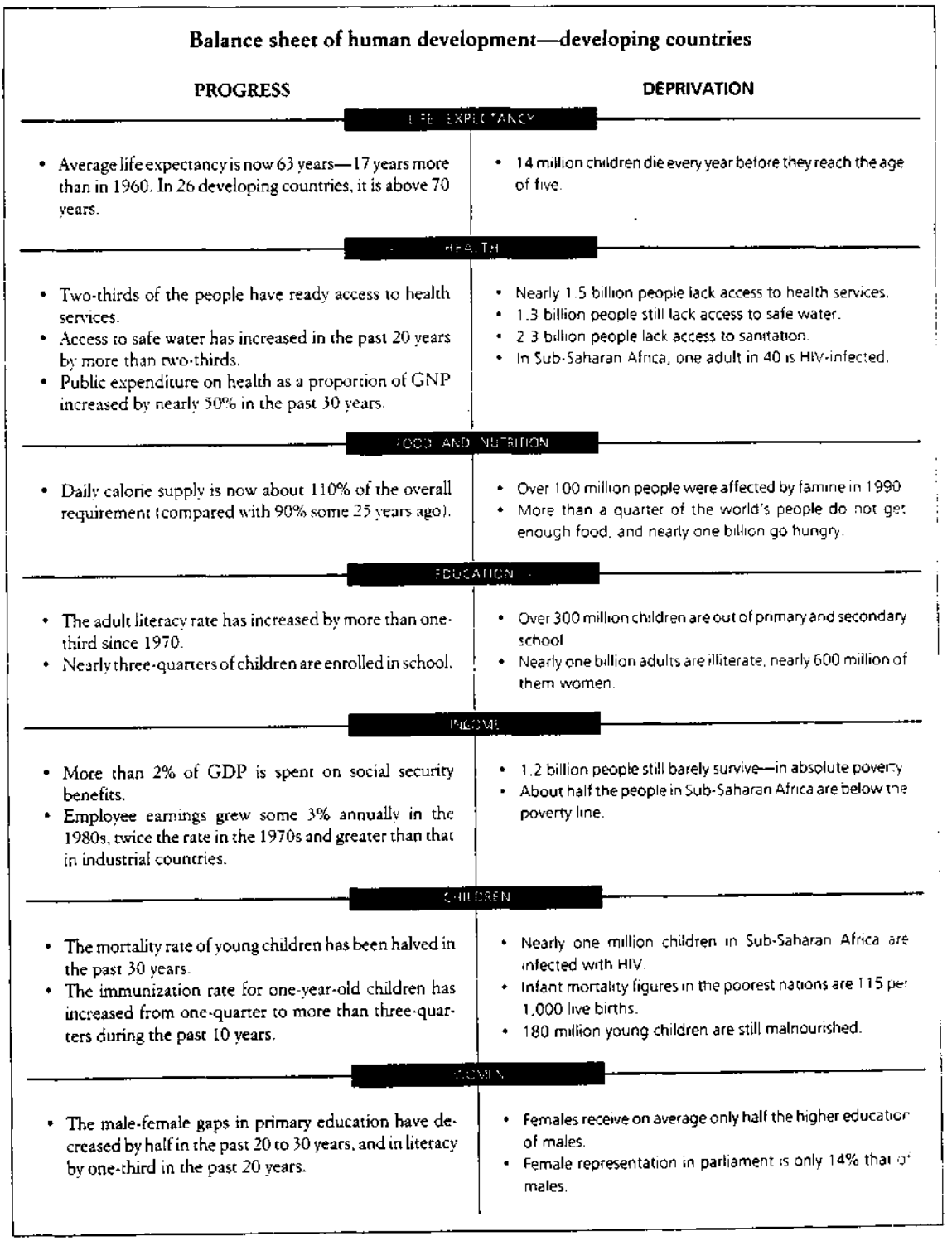
Age 9,
Accra, Ghana

Adapted from *New Internationalist*, No. 76 , June 1979.

RESOURCE 2

BALANCE SHEET OF HUMAN DEVELOPMENT - DEVELOPING COUNTRIES

Source: United Nations Development Programme (1993) *Human Development Report 1993: Putting People at the Centre of Development*, UNDP, New York.



RESOURCE 3

BALANCE SHEET OF HUMAN DEVELOPMENT - INDUSTRIAL COUNTRIES

Source: United Nations Development Programme (1993) *Human Development Report 1993: Putting People at the Centre of Development*, UNDP, New York.

Balance sheet of human development—industrial countries

PROGRESS	DEPRIVATION
LIFE EXPECTANCY AND HEALTH	
• Average life expectancy is 75 years. • There is one doctor for every 460 people. • Two-thirds of the people are eligible for public health insurance and nearly three-quarters of the health bills are paid by public insurance.	• One in three adults smokes. • Nearly five people in every 1,000 are seriously injured in road accidents. • The cost of in-patient care has increased by two-thirds since 1980. • Some 300,000 cases of AIDS have been reported to date.
EDUCATION	
• The proportion of the population going on to university has increased from less than one-quarter in 1965 to more than one-third today. • There are more than 80 scientists and technicians for every 1,000 people.	• One-third of adults have not completed secondary education. • For every 100 teachers, there are 97 soldiers.
INCOME AND EMPLOYMENT	
• Average income has increased three and a half times in the past 30 years. • Social security benefits average nearly 11% of GDP, and 1.3% of GDP is spent on labour market programmes. • More than one-quarter of the labour force is unionized.	• In the OECD countries alone, an estimated 30 million people are unemployed, and one-third of them have been out of work for over two years. The rate of unemployment among youth is 13% and rising. • The wealthiest 20% of the people receive on average seven times the income of the poorest 20%.
WOMEN	
• At the secondary level, female school enrolment is higher than male. At the tertiary level, it is about equal—though about one-third less for science. • Women's participation in the labour force was 44% of men's in 1960. Now it is 78%.	• Women's wages are still on average only two-thirds those of men, and their unemployment rate is consistently higher. • Each year, one woman in 2,000 is reported raped
SOCIAL FABRIC	
• Nearly one person in two has a TV, one in three reads a newspaper and eight in 10 visit a museum at least once a year.	• One in every 500 people is in jail. • The average homicide rate is four per 100,000. • The annual divorce rate for people over 25 is nearly 5%.
ENVIRONMENT	
• Since 1965, production has become six times less energy-intensive. • Some 60% of people are served by water-treatment facilities. • Industrial and other countries have agreed to phase out major CFCs (chlorofluorocarbons) by the year 2000.	• The greenhouse index is four times that of the developing world. • 42 kilograms of air pollutants are emitted annually per 100 people. • Nearly 10 metric tons of hazardous and special waste are generated annually per square kilometre.

RESOURCE 4

OBJECTIVES FOR DEVELOPMENT EDUCATION

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/AIDAB, Canberra, pp. 19-20.

KNOWLEDGE AND UNDERSTANDING

- *Awareness of Self*

  Students should have an understanding of their place in a family, local community, region, nation and the world.

- *Other Cultures*

  Students should be aware of both the diversity and similarity of ideas and practices found in societies around the world, and how the ideas and ways of their own society might be viewed by others.

- *Awareness of Perspectives*

  Students should understand that particular viewpoints, which are not universally shared, do indeed affect decision-making and behaviour. They should be aware of how perspectives are shaped, and realise that it often happens unconsciously.

- *Inequalities Within and Between Regions*

  Students should know about the major inequalities of wealth and power in the world, both between and within countries. They should be aware of the efforts being made to reduce them through aid, trade, technology, disarmament and development etc.

- *Interdependence*

  Students should understand that things are connected in the ecological, economic, political and social environments. Individuals and communities are linked with, influenced by, and dependent upon others.

- *Change and Development*

  Students should be aware of the causes of change. They should have an understanding of how values and attitudes determine alternative approaches to development and shape possible futures.

FEELINGS AND VALUES

- *Positive Self Image*

  Students should have a sense of their own worth as individuals and of the worth of their own family, social and cultural background.

- *Acceptance of and Respect for Others*

  Students should develop an appreciation of the worth of all people, have a willingness to seek out and learn from others whether from similar or different backgrounds.

- *Open Mindedness*

  Students should have a desire to find out more abut issues related to living in an interdependent world, a willingness to approach all issues with a critical, reflective and open mind, and a readiness to change their ideas as their understanding grows.

- *Empathy*

  Students should be willing to understand the feelings, viewpoints and actions of other, particularly those in situations different from their own.

- *Concern for Justice*

  Students should develop a love of justice, and a willingness to support the victims of injustice in their own and other societies.

- *Respect for Human Rights*

  Students should be committed to defending their own rights and the rights of others. They should be aware of the responsibilities such rights entail.

- *Commitment to Democracy*

  Students should value the principles of equity as the basis upon which relationships between individuals, groups and societies should be organised.

SKILLS AND PROCESSES

- *Inquiry*

  Students should know how to find and record information about world issues from publications of various kinds, from audio-visual materials and from interviewing people with special experience.

- *Critical Thinking*

  Students should be able to evaluate the quality, relevance and priority of information, to distinguish between fact and opinion, and to recognise perspectives, bias and the validity of sources.

- *Communication*

  Students should be able to explain their ideas in a variety of ways; in writing, discussion, in art and media forms, with many people, including those of other cultures.

- *Decision-making and Problem Solving*

  Students should be able to weigh up the relevance, validity and implications of alternative solutions. Their decisions should be clear and reasonable.

- *Social Skills*

  Students should develop the social skills necessary to work cooperatively, and express their views and feelings showing consideration of others.

- *Political Skills*

  Students should develop the ability to participate in formal and informal political decision-making at local, national and international levels in both formal and informal ways.

INVOLVEMENT AND ACTION

- *Willingness to be Involved*

  Students should be motivated to act upon their insights to redress challenges to human rights, justice and democracy.

- *Identifying Alternative Courses of Action*

  Students should know how to investigate actions already taken by others, listening, discussing, and reporting upon them, as well as drawing on their own ideas to identify possible alternatives.

- *Evaluating Likely Consequences*

  Students should be able to reflect upon actions to anticipate consequences and weigh up likely outcomes.

- *Personal Commitment*

  Students should have the desire to choose to take a particular course of action as an individual or member of a group or class.

- *Taking Appropriate Action*

  Students should know how to undertake action, from informative action such as presenting findings to a wider audience, to cooperative action which includes joining with community groups, petitioning and fund-raising.

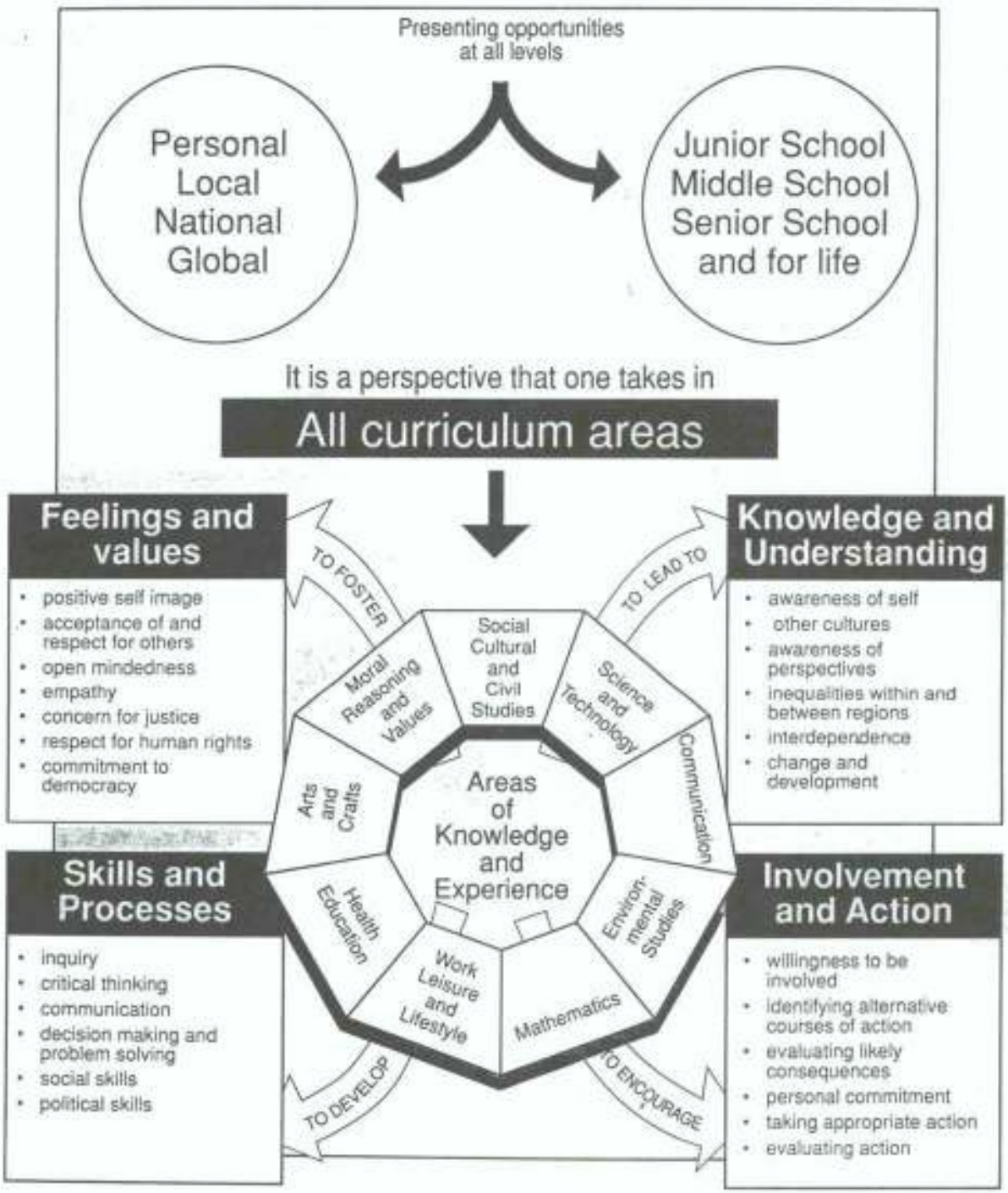
- *Evaluating the Process and Effects of Action*

  Students should develop the ability to reflect upon actions that evolve from a school-based program. They should be able to evaluate their success and map future alternatives that can be taken by students or concerned community members.

RESOURCE 5

SCOPE OF DEVELOPMENT EDUCATION

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/ AIDAB, Canberra, p. 18.



RESOURCE 3

BALANCE SHEET OF HUMAN DEVELOPMENT - INDUSTRIAL COUNTRIES

Source: United Nations Development Programme (1993) *Human Development Report 1993: Putting People at the Centre of Development*, UNDP, New York.

Balance sheet of human development—industrial countries

PROGRESS	DEPRIVATION
LIFE EXPECTANCY AND HEALTH	
• Average life expectancy is 75 years. • There is one doctor for every 460 people. • Two-thirds of the people are eligible for public health insurance and nearly three-quarters of the health bills are paid by public insurance.	• One in three adults smokes. • Nearly five people in every 1,000 are seriously injured in road accidents. • The cost of in-patient care has increased by two-thirds since 1980. • Some 300,000 cases of AIDS have been reported to date.
EDUCATION	
• The proportion of the population going on to university has increased from less than one-quarter in 1965 to more than one-third today. • There are more than 80 scientists and technicians for every 1,000 people.	• One-third of adults have not completed secondary education. • For every 100 teachers, there are 97 soldiers.
INCOME AND EMPLOYMENT	
• Average income has increased three and a half times in the past 30 years. • Social security benefits average nearly 11% of GDP, and 1.3% of GDP is spent on labour market programmes. • More than one-quarter of the labour force is unionized.	• In the OECD countries alone, an estimated 30 million people are unemployed, and one-third of them have been out of work for over two years. The rate of unemployment among youth is 13% and rising. • The wealthiest 20% of the people receive on average seven times the income of the poorest 20%.
WOMEN	
• At the secondary level, female school enrolment is higher than male. At the tertiary level, it is about equal—though about one-third less for science. • Women's participation in the labour force was 44% of men's in 1960. Now it is 78%.	• Women's wages are still on average only two-thirds those of men, and their unemployment rate is consistently higher. • Each year, one woman in 2,000 is reported raped.
SOCIAL FABRIC	
• Nearly one person in two has a TV, one in three reads a newspaper and eight in 10 visit a museum at least once a year.	• One in every 500 people is in jail. • The average homicide rate is four per 100,000. • The annual divorce rate for people over 25 is nearly 5%.
ENVIRONMENT	
• Since 1965, production has become six times less energy-intensive. • Some 60% of people are served by water-treatment facilities. • Industrial and other countries have agreed to phase out major CFCs (chlorofluorocarbons) by the year 2000.	• The greenhouse index is four times that of the developing world. • 42 kilograms of air pollutants are emitted annually per 100 people. • Nearly 10 metric tons of hazardous and special waste are generated annually per square kilometre.

RESOURCE 4

OBJECTIVES FOR DEVELOPMENT EDUCATION

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/ AIDAB, Canberra, pp. 19-20.

KNOWLEDGE AND UNDERSTANDING

- *Awareness of Self*

  Students should have an understanding of their place in a family, local community, region, nation and the world.

- *Other Cultures*

  Students should be aware of both the diversity and similarity of ideas and practices found in societies around the world, and how the ideas and ways of their own society might be viewed by others.

- *Awareness of Perspectives*

  Students should understand that particular viewpoints, which are not universally shared, do indeed affect decision-making and behaviour. They should be aware of how perspectives are shaped, and realise that it often happens unconsciously.

- *Inequalities Within and Between Regions*

  Students should know about the major inequalities of wealth and power in the world, both between and within countries. They should be aware of the efforts being made to reduce them through aid, trade, technology, disarmament and development etc.

- *Interdependence*

  Students should understand that things are connected in the ecological, economic, political and social environments. Individuals and communities are linked with, influenced by, and dependent upon others.

- *Change and Development*

  Students should be aware of the causes of change. They should have an understanding of how values and attitudes determine alternative approaches to development and shape possible futures.

FEELINGS AND VALUES

- *Positive Self Image*

  Students should have a sense of their own worth as individuals and of the worth of their own family, social and cultural background.

- *Acceptance of and Respect for Others*

  Students should develop an appreciation of the worth of all people, have a willingness to seek out and learn from others whether from similar or different backgrounds.

- *Open Mindedness*

  Students should have a desire to find out more abut issues related to living in an interdependent world, a willingness to approach all issues with a critical, reflective and open mind, and a readiness to change their ideas as their understanding grows.

- *Empathy*

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- *Communication*

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- *Decision-making and Problem Solving*

  Students should be able to weigh up the relevance, validity and implications of alternative solutions. Their decisions should be clear and reasonable.

RESOURCE 1

CHRIS AND KWEKU

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/ AIDAB, Canberra, p.9.

My name is Chris. I am 10 years old. Our teacher gave us a story to read. It began 'My name is Kweku'. It was sad and it made me feel lonely. I wouldn't like to be like him, I feel sorry for Kweku, he has lived a hard life. I wish someone would help him soon because at nine he needs an education. If he had gone to school he could get a better job. I go to school. I will write my story.

My name is Chris I've got a house. My best fried is Keith and I go to Aldinga Primary School to learn. There's five of us in the family. I like playing on the computer on weekends or after 4.30. I've got $30 in my wallet. I get $2 every Friday.

My age is 10 and in Grade 5. My dad works at Nestles, and mum works around the house. I have over ten fluffy toys in my bedroom. I go to church usually on Sundays.

I play cricket and indoor games. I've got a pet called Monty he's only got three legs because he got run over by a motor bike and we took him to the vet to fix him up.

Mum and dad have two cars a job car and mums got her own. We haven't got a grandma any more.

We have got a big house and paddocks. I think we've got four paddocks. When I am sick I am looked after. I get food every day. I don't ever have to worry about running out of food I hardly ever be sick.

Keith and me and the rest of our class did a survey in maths to see what we had compared to Kweku. Me made a list of things to survey. We found that in the families that the twenty-two of us came from, we owned these things:

24 TVs	3 swimming pools	12 stereos
26 bikes	8 videos	13 trampolines
6 computers	3 pool tables	6 microwaves
53 transistors or Walkmen	10 dishwashers	24 pets
25 cars	1 horse	3 caravans
6 boats		

and between the twenty-two of us we get $51.50 pocket money per week.

I showed our survey to Mum and asked her why we have so much and Kweku has so little. She didn't know all the reasons. At school we are going to find out more about why this happens and what we can do

Chris Age 10
Aldinga Primary School, Australia

My name is Kweku

My name is Kweku. I am 9 years old. A lot of people call me a small boy, but I live alone. My work is that I sell chewing gum around the Orion Circle at cinema time. Plenty boys and girls come buy the 'PK' before they see cinema. I don't go to school. I don't go because I don't have money. My mother died before they born me. My father nobody know. Some woman give me milk when I am a little baby, now I am old so I work. I sleep in the far night at 2.00 am sometimes 3.00 am morning time. I have no sleeping house. I sleep at the lorry petrol station. I buy food they sell on road.

I want there to be no war and no children born like I am. I suffer plenty. You don't get soap, sugar and plenty plenty things. I want this year to bring house for us and water for village people to drink. Don't take photo of me. I don't want white man see me dirty.

Age 9,
Accra, Ghana

Adapted from *New Internationalist*, No. 76 , June 1979.

RESOURCE 2

BALANCE SHEET OF HUMAN DEVELOPMENT - DEVELOPING COUNTRIES

Source: United Nations Development Programme (1993) *Human Development Report 1993: Putting People at the Centre of Development*, UNDP, New York.

Balance sheet of human development—developing countries

PROGRESS	DEPRIVATION
LIFE EXPECTANCY	
• Average life expectancy is now 63 years—17 years more than in 1960. In 26 developing countries, it is above 70 years.	• 14 million children die every year before they reach the age of five.
HEALTH	
• Two-thirds of the people have ready access to health services. • Access to safe water has increased in the past 20 years by more than two-thirds. • Public expenditure on health as a proportion of GNP increased by nearly 50% in the past 30 years.	• Nearly 1.5 billion people lack access to health services. • 1.3 billion people still lack access to safe water. • 2.3 billion people lack access to sanitation. • In Sub-Saharan Africa, one adult in 40 is HIV-infected.
FOOD AND NUTRITION	
• Daily calorie supply is now about 110% of the overall requirement (compared with 90% some 25 years ago).	• Over 100 million people were affected by famine in 1990. • More than a quarter of the world's people do not get enough food, and nearly one billion go hungry.
EDUCATION	
• The adult literacy rate has increased by more than one-third since 1970. • Nearly three-quarters of children are enrolled in school.	• Over 300 million children are out of primary and secondary school. • Nearly one billion adults are illiterate, nearly 600 million of them women.
INCOME	
• More than 2% of GDP is spent on social security benefits. • Employee earnings grew some 3% annually in the 1980s, twice the rate in the 1970s and greater than that in industrial countries.	• 1.2 billion people still barely survive—in absolute poverty. • About half the people in Sub-Saharan Africa are below the poverty line.
CHILDREN	
• The mortality rate of young children has been halved in the past 30 years. • The immunization rate for one-year-old children has increased from one-quarter to more than three-quarters during the past 10 years.	• Nearly one million children in Sub-Saharan Africa are infected with HIV. • Infant mortality figures in the poorest nations are 115 per 1,000 live births. • 180 million young children are still malnourished.
WOMEN	
• The male-female gaps in primary education have decreased by half in the past 20 to 30 years, and in literacy by one-third in the past 20 years.	• Females receive on average only half the higher education of males. • Female representation in parliament is only 14% that of males.

RESOURCE 6

EXAMPLES OF DEVELOPMENT EDUCATION

Source: Classroom vignettes written by Margaret Calder, John Fien and Roger Smith

Library Education

It is after normal school hours. A group of students are assisting at a community centre where women and men who cannot read effectively are animatedly discussing a short newspaper report on the social effects of unemployment. Their teacher has adapted reading techniques developed in Latin America by Paolo Freire to the local situation and is using the everyday life experiences of the students in her class to develop both their reading and their social literacy skills.

Pre-school Group Work

The classroom is in a pre-school. The children are working on the floor in small groups. One group is assembling a large-piece jigsaw puzzle of the world but it is harder than it seems as all the continents are the same colour. The second group is learning the words of 'We are the World' to sing at the next Parents' Morning. A third group is using a UNICEF kit to construct four different West African buildings from printed cards.

The World in a Chocolate Bar

In this school, we find groups of ten year olds sitting at their desks. Each group has a chocolate bar and a small knife. Each student has a role: an African cocoa grower, a local merchant-middleman, an African government, a shipping company manager, a chocolate factory owner, a factory worker, the tax department, and a local shopkeeper. A large poster picture of a chocolate bar is on the chalkboard at the front of the room. The chocolate bar is divided into sections according to how much each person in the commodity chain earns. The teacher starts at the shopkeeper and, working backwards all the way to the cocoa grower, explains the share of the chocolate bar price each person is paid. As the teacher completes each explanation, the student with that role cuts off a proportionate piece of the group's chocolate bar and eats it. The cocoa growers in the groups are concerned at the very small piece of chocolate left for them! After this exercise, the teacher leads a class discussion on other examples of injustice in the world food system. She then gives each group a new chocolate bar with instructions to divide it between group members in a fairer manner.

World Food

A geography teacher has just completed a lesson in which all the class, boys and girls, had made some cakes. All the labels from the ingredient packets were kept for the next lesson during which the names and addresses of all the companies whose products were used were written down. Individual students then wrote to one company each to request information on the sources of that company's raw materials. Three weeks later, with most of the replies in, the class was able to trace the origin of all the ingredients and the routes by which they arrived in their town as a practical everyday example of the concept of interdependence.

Soup for Everyone

A Year 3 class is helping to make a pot of soup. With supervision and help from older students they are cutting the vegetables they have each brought to school, and are adding them to the prepared stock. At lunchtime the hot soup is shared with other classes. After lunch the students discuss how their contributions and cooperation made the soup special for everybody. This leads on to suggestions for other ways they can bring one or more items to school to cooperate in making something. A large poster-collage of *Children of the World* from magazine pictures is decided upon. This is to be made in the shape of the globe to be the centre of a display for United Nations Children's Day.

READING 1

WHAT IS DEVELOPMENT EDUCATION?

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/ AIDAB, Canberra, pp. 13-14.

Where Development Education Came From

Development education is a term first used in the 1960s by the United Nations. It grew out of the mounting concern of aid organisations, the churches and the United Nations over Third World poverty. The United Nations believed that if in the industrialised countries there was more education about life in and the needs of economically poorer countries, then there would be more political support for increasing the amount of aid given to them.

During the 1960's, 70's and 80's the rich industrial countries of the West (eg Australia, USA, Japan) were known as the 'First World'. Countries in the communist block (eg USSR, Cuba, Poland, Hungary) were known as the 'Second World'. These two groups together became known as the developed world, or the North, while poor countries were often called developing or underdeveloped countries or the 'South' or the 'Third World' (eg India, Kenya, Fiji, China). Another term which emerged during this period was NIC, Newly Industrialising Country, (eg Singapore, Taiwan, Mexico, Brazil). The changes in Europe with the democratisation of Eastern Europe (eg Czechoslovakia), the formation of one Germany (ie the unification of West and East Germany) and the break-up of the former USSR has made the term 'Second World' practically obsolete except for a few countries (eg Cuba, North Korea).

There are always problems in labelling countries of blocks of countries. Anomalies occur because countries can clearly be included in two different groupings (eg China—'Second World' or 'Third World'?)

In the late 1970's following the publication of the Brandt Report, *North South: A Programme for Survival*, the terms 'North' and 'South' came into vogue. Many found this division of the world to be difficult when some 'North' countries (eg Australia) were geographically in the southern hemisphere.

The education that emerged to teach about the economically poorer countries, or Third World, was called development education.

A Dynamic Term

Development education is changing its meaning in response to the needs, values and concerns of the times. Most significantly since the late 1970's development education is seen as being concerned with the nature and quality of development in both the so-called developed First and Second Worlds and the underdeveloped Third World. It stresses the interdependence and links between them, focusing on consumption as well as scarcity. It also addresses issues of who is powerful, who is powerless; the fairness of relationships; human rights; environmental abuse; and economic, social and political justice in all societies.

The meaning of the term *development education* evolved for several reasons:

- Many problems of the poor world; for example, colonialism, racism, unfair trade, resource exploitation, multinational corporations and arms sales; originate in developed countries. Development education should be concerned with looking at what is going on in the rich world, and at the links between all countries.
- There is wealth, poverty, inequality and injustice in all countries, not just in the poor world.
- The Third World is now not only used to describe economically poor countries. It also encompasses groups or areas in all countries that have been marginalised by economic and political systems. For example, women, the homeless, unemployed, ethnic minorities, indigenous people, and the undeveloped, remote or uninfluential parts of wealthy countries. Some people are now using the term Fourth World to describe these groups.
- The definition of terms such as 'developed' or 'underdeveloped' depend on the individual's point of view. Also, what is appropriate development in one context is not necessarily appropriate in another.
- The report of the World Commission on Environment and Development (WCED) called *Our Common Future* (sometimes called the Brundtland Report), which emphasised the long-term environmental and development challenges used the term *sustainable development*. This term means different things to different people. Ideally, it means a development

process which is democratic, equitable, conserves natural resources, and which can be pursued indefinitely without environmental or social ill-effects.

- The United Nations Conference on Environment and Development (UNCED '92) which was held in Rio de Janeiro, Brazil also challenged conventional views of development and secured a place for the whole concepts of sustainable development and education for sustainable development.
- Those in the West have much to learn from non-Western perspectives on development.

It is clear now that the term 'development education' no longer just means teaching about the 'Third World'.

The focus of development education is now more on:

- *quality* of economic, social and political development in all countries;
- *fairness* of relationships between and within countries;
- *linkages* between the developing and the developed countries and the ways in which events in one part of the globe affect events in others; and
- the need to link development processes with *sustaining* natural environments and cultures.

It suggests, wherever possible, looking at development issues through the eyes and perspectives of people from the developing world or underprivileged sections of society. It raises awareness and encourages commitment. It empowers people to participate effectively in the development of a better world for all.

READING 2

THE HIDDEN CURRICULUM AND DEVELOPMENT EDUCATION

Source: Calder, M. and Smith, R. (1991) *A Better World for All: Development Education for the Classroom*, AGPS/AIDAB, Canberra, pp. 70-72. Adapted from material by Louise Crowe and Mary Hoban in the *Social Justice Task Force Newsletter*, No. 3, 1984, Victorian Ministry of Education.

What is the Hidden Curriculum?

You've got to be taught to be afraid
Of people whose eyes are differently made,
Of people whose skin is a different shade,
You've got to be carefully taught.
You've come to be taught before it's too late,
Before you're six or seven or eight
To hate all the people your relatives hate,
You've come to be carefully taught

Quoted by Ben Chetkow-Yanov at a Conference on Curriculum for International Understanding, Canada, 1983.

Prejudice, intolerance, bias, racism and other values can be unconsciously reflected by teachers and textbooks — 'unconscious' because these values are often largely unrecognised and so go unchallenged.

The expression 'the hidden curriculum' describes the assumptions that are implicit in all aspects of school life— the attitudes, values, skills and knowledge which are never actually spelt out but are nevertheless effectively learned by the students.

The hidden curriculum may include attitudes to people of other cultures, religions and race; authority, the place of schools and schooling, and learning and teaching methods; the importance of particular subjects, sport, the community and of other countries; and gender roles. Students develop their attitudes through everyday experiences. Commonly held assumptions can then be transmitted as fact.

Teachers play a large part in the transmission of the values of the hidden curriculum, by teaching with materials and resources that may be biased or ethnocentric, by approving or disapproving of the behaviour of students, and by expecting different sorts of behaviour or responses from particular students. Stereotyping of students or others leads to the development of attitudes that limit the students' perceptions and defeats the aims of fostering understanding and tolerance.

Parents and visitors can rapidly sense the values of the school by the way in which students and teachers talk to each other, by displays in corridors and classrooms, by the students' style of movement around the buildings, by the welcoming or non-welcoming atmosphere. The hidden curriculum is also transmitted to parents through the tone of letters sent home, and through expectations or judgments about parents' behaviour.

Language can be fraught with bias, values, racism, sexism and a myriad of other things which do not encourage thought but simply form or entrench intolerant attitudes and beliefs. The acceptance of values, attitudes and expectations which are approved by the school is acquired without explicit teaching. It is truly 'hidden'.

For teachers, consideration of the hidden curriculum is vitally important. Development education is as much to do with language and methods, as content and skills. It requires sensitivity consistent with its objectives and contains dimensions that include relationships between all members of the school community.

The hidden curriculum in schools can be as powerful as the open or formal curriculum.

Confronting the Hidden Curriculum

There is a continual need to evaluate the unconscious values implicit in the language we use, the structures in place in the classroom and school, and the resources with which we teach. Teachers and students alike must be alerted to this hidden curriculum so that they can challenge negative assumptions and values

The following ideas suggest questions that can be used to assess the way development issues are treated in the curriculum.

Stereotyping: Do we have a tendency to categorise and label people without much evidence? Are all people presented as alike? Are the particular attributes emphasised or sensationalised? Often notions about particular groups become common and fixed in the mind of the public and are frequently consolidated by the media. Terminology is a powerful transmitter of stereotypes. It is not only *negative* stereotyping that is of concern, but the very act of labelling and slotting into fixed conceptions that narrows our thinking about people from different countries or ethnic groups.

Ethnocentrism: Are other cultures and races being judged according to one's own standards in the belief that one's viewpoint is *correct* or *best*? It is so easy to be comfortable with the familiar, and we too easily become suspicious of anything different. It is difficult to recognise that we unconsciously affirm, praise, even glorify what is familiar to us, and ignore or negate that which we don't know so well.

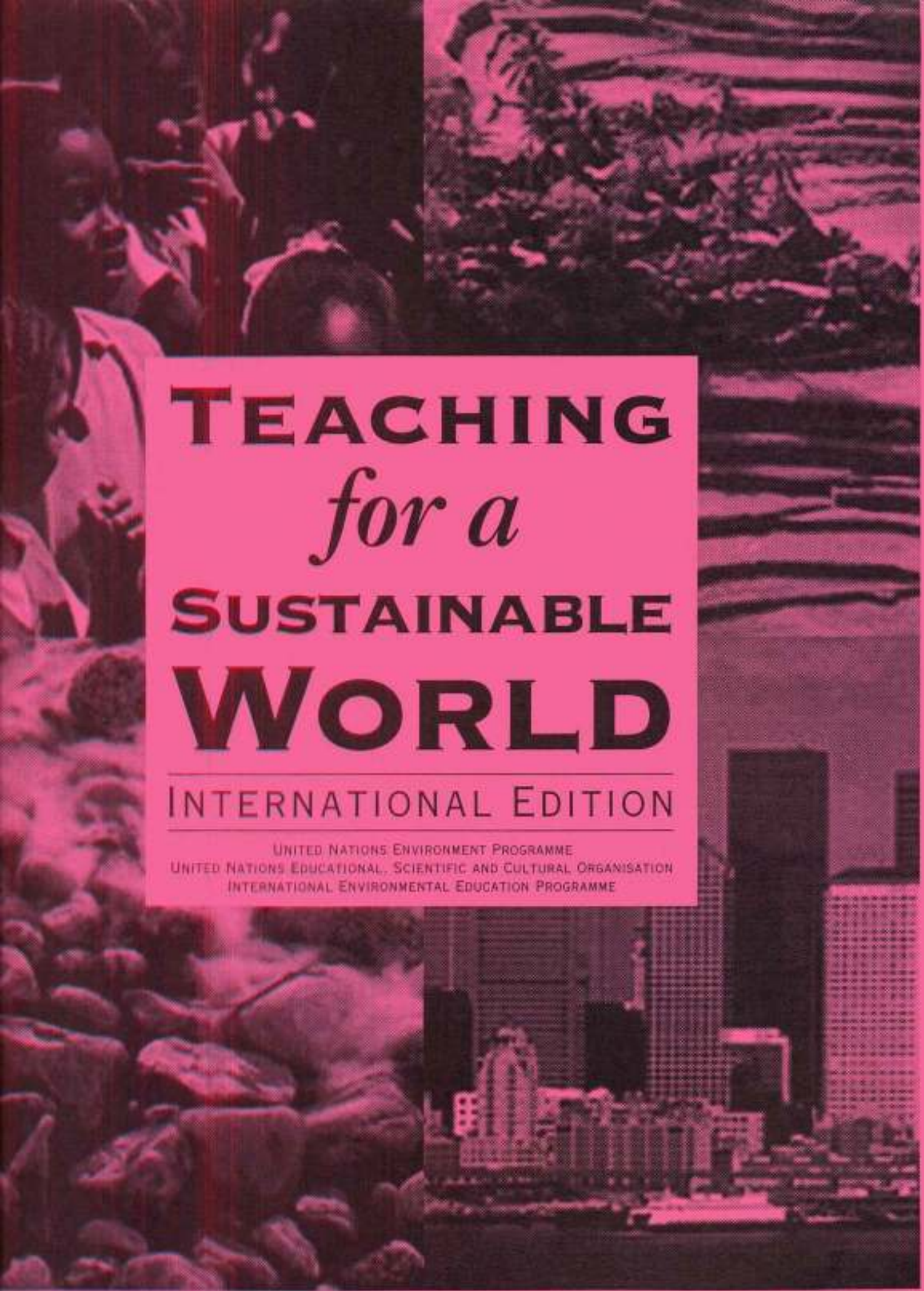
'Primitive' vs 'Modern': Are things seen along a continuum from primitive to modern? Is society judged by the yardstick of technological development? Is 'progress' used to justify the destruction and dissolution of cultures and traditions centuries old?

Racism: Is there an implicit belief that physical or genetic differences influence intellectual ability, moral behaviour, and emotional responses, and that one's own physical and genetic characteristics are superior?

Sexism and the Marginalisation of Women: Is the role of women considered adequately and positively? Are certain role-models assumed? Are women only mentioned in classroom discussion or in the resources used in terms of domestic labour, passive bystander or not mentioned at all?

Omission and Neglect: Many resources ignore the enormous diversity of people. We are presented as homogenous groups, ignoring cultural, linguistic and ethnic divisions. Minority groups are often overlooked entirely. The dominant groups are therefore portrayed as representing a whole country.

The Whole Story? Much information is given to us out of context, ignoring cultural factors, spirituality and systems of meaning and belief. This produces negative feelings in students, who cannot comprehend or appreciate different modes of behaviour and lifestyles. If they cannot understand why people act in a certain way, they easily label them odd. Negative episodes given to us out of context give rise to hostility, which our society seems to find easier to reinforce rather than eradicate.



MODULE 4

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID
AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC.

EXPLORING *the* LINKS

MARGUERITE YOUNG
WORLD WIDE FUND FOR NATURE
AUSTRALIA

INTRODUCTION

This workshop is one of the core modules in this series. It explores the links between development education and environmental education. Rarely are global issues or issues involving the future of our lives on earth concerned solely with development or environment. A world in which we live according to the principles of ecologically sustainable development relies on an interdependent world to which we all have a responsibility to contribute. Ecologically sustainable development (ESD) is defined for the purpose of this workshop as 'Improving the quality of human life while living within the carrying capacity of supporting ecosystems' as outlined in *Caring for the Earth* published by IUCN, UNEP and WWF (1991).

OUTCOMES

Through participation in the activities in this workshop, participants will:

- consolidate the underpinning philosophy and information gained in the separate workshops on development education and environmental education;
- understand the links between development education and environmental education;
- understand the relevance of an integrated approach to the teaching of development and environmental issues;
- develop skills to evaluate activities for their content and method; and
- realise that the process of learning is as important as the content.

WORKSHOP OUTLINE

The workshop consists of activities organised around three themes.

1. **Development Education and Environmental Education - Mutually Exclusive?**

A. Ice breaker - initial reactions to a cartoon.

B. Warm up: To which type of education does the topic fit?

2. **Exploring the Links between Development Education and Environmental Education.**

A. Mini-lecture on 'A Proliferation of Educations' and discussion on the similarities and differences between the two educations.

B. Two classroom activities which explore the links are analysed.

3. **Education for the Future**

A. Mini-lecture and discussion on 'Education for the Future'.

B. Review of previous activities to ascertain if they cover the points in the educational rationale just explored.

The workshop concludes with a review/consolidation of key themes and with participants being given a follow-on assignment to devise a 40 minute classroom activity.

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Workshop Overview

OHT 2: Which?

OHT 3: An Easy Puzzle!

OHT 4: Important Pupil Outcomes

OHT 5: Main Points of the Workshop

RESOURCES

Resource 1: Cartoon Worksheet

Resource 2: Topics for Investigation

Resource 3: Four Educations? One Education?

Resource 4: Who Owns the Reefs?

Resource 5: Land Use Conflict Simulation

Resource 6: Solutions for Pollution

Resource 7: The Integrated Project in Arid Lands

READING

See Reading 3 in the Introduction section of this manual: Greig, S., Pike, G. and Selby, D. (1987) *Earthrights: Education as if People Mattered*, WWF and Kogan Page, London, pp. 23-31, 36-37

B) TO OBTAIN

Activity 1: Resource 2 needs to be photocopied and cut up so that there is a set for each group.

ADDITIONAL READING

This workshop is fully self-contained and needs no additional resources. However the videos contained in the *Only One Earth* WWF Multi-Media Pack would be an asset if this pack is available.

Greig, S., Pike, G. and Selby, D. (1987) *Earthrights: Education As If the Planet Really Mattered*, WWF, London, pp 23-38.

Hicks, D. (1991) *Exploring Alternative Futures: A Teachers Interim Guide*, Global Futures Project, Institute of Education, University of London.

Pye-Smith, C. (1987) The Planet in the Pawn Shop, in *Only One Earth*, WWF Multi-Media Education Pack, WWF UK, pp. 22-26.

Participant Activities

WWF *Only One Earth* WWF Multi-Media Education Pack, WWF, UK.

Dawson, L.Y. (1992) *How to Interpret Natural and Historical Resources*, WWF Latin American and Caribbean Program, Washington, DC.

Huckle, J. (coordinator) (1988) *What We Consume, Unit 1-10 China*, WWF UK and Bedford College of Higher Education in conjunction with The Richmond Publishing Company, UK.

Most of these are available for purchase from :

WWF UK, Education Distribution
PO Box 963
Slough SL2 3RS

1. Development Education and Environmental Education - Mutually Exclusive?

A. Icebreaker: Initial Reactions

The purpose of this activity is to confront participants with their own initial reactions to a development/environment issue, and then to compare this initial reaction with how they feel at the end of the workshop.

- Photocopy the cartoon worksheet on Resource 1.
- Distribute one copy per participant at the beginning of class and ask participants to quickly answer the questions on the worksheet.
- Ask participants to put the sheet away until the end of the workshop.

B. Overview of the Workshop

To acquaint participants with the workshop, go through the sequence of points on OHT 1.

C. 'Which Type of Education?'

This activity provokes discussion as to which subject belongs where and leads participants to the realisation that there is much overlap between environmental and development education.

- Photocopy Resource 2 and cut into 24 cards. A complete set will be necessary for each group.
- Divide the class into groups of 4-6 participants.
- Give each group a set of cards made from Resource 2 and ask 'In which type of education would you learn about the following?' Each person in each team takes a card off the pile in turn and assisted by everybody places that card onto one of four piles: (i) Development Education, (ii) Environmental Education, (iii) both or (iv) neither.
- Use OHT 2, to discuss the difficulty of classifying content and issues.

2. Exploring the Links between Development Education and Environmental Education

A. Mini-lecture and Discussion: 'A Proliferation of Educations'

The purpose of this part of the workshop is to consolidate participants' appreciation of the links between development education and environmental education. The best resource for this is Reading 3 from the Introduction section of this manual.

- Present the material contained in the reading.
- Hand out Resource 3. It is interesting to cut this out in the shape of the diagram as it attracts great interest from participants in this form.
- Lead participants to the conclusion that both development and environmental education 'share relatively few and sometimes no mutual or overlapping concerns at their narrow focus. At their broad focus, however, there is an extremely marked degree of convergence between the two educations to the point where it becomes difficult to conceive of them as discrete field' (Pike and Selby 1987).
- Use OHT 3 to lead a discussion on why the different types of education are 'complementary, interdependent and mutually illuminating'.

B. Classroom Activities that Explore the Links

This is the major part of the workshop and is based upon the four classroom activities in Resources 4, 5, 6 and 7. The four activities are based upon material in four different WWF education packs. Each one explores the links between environmental and development issues. The four activities are: ;

Resource 4: Who owns the Reefs? from Ocean Fisheries booklet in WWF (1989) *Only One Earth* WWF Multi-media Education Pack WWF UK, Godalming.

Resource 5: Land Use Conflict Simulation, in L. Dawson (1992) *How to Interpret Natural and Historical Resources*, WWF Latin America and Caribbean Program, WWF Washington, DC, pp. 87-91.

Resource 6: Solutions for Pollution, Activity 8.4 in J. Huckle (1988) *What We Consume: Unit 8 China*, WWF UK and Bedford College of Higher Education in conjunction with The Richmond Publishing Company, UK, pp. 48-53.

Resource 7: The Integrated Project in Arid Lands, in WWF (1989) *Only One Earth* WWF Multi-media Education Pack WWF UK, Godalming..

- Give participants a brief overview of the themes of the four activities and divide them into small groups based upon their choices of the four themes. Distribute copies of chosen activities to each group.
- Ask participants to actually work through their chosen activities as if they were school students. This may take 30 minutes.
- As the groups finish their activities, ask them to prepare a group report which:
  - outlines the environment - development dilemma;
  - explains why the real people involved found making a decision on the dilemma difficult;
  - outlines the decision they came to (and reasons); and
  - identifies the educational value of the activity and how it might be adapted to use with a class they are familiar with.
- Give each group 5-10 minutes to report.

3. Education for the Future

A. Mini-lecture and Discussion

The purpose of this activity is to provoke discussion that both types of education are about education 'for the future' and that the process of learning is as important as the content.

- Ask the question: 'In its broadest sense then, both environmental education and development education should be about?'..... hoping to elicit that it is about 'teaching participants to work for future change that will create a better world for all'.
- Lead a discussion on 'What sort of knowledge, attitude and skills are required so that pupils are educated *for the future!*' OHT 4 provides one list against which participants can review their answers.

B. Review of Classroom Activities

In this activity, the classroom activities just studied are evaluated for their ability to educate 'for the future'. Participants also try to place these types of activities in the context of the school curriculum.

- Ask participants to reform their groups and to review their classroom activity to see if it encourages or fosters the pupil outcomes just discussed.
- Discuss these activities and determine if they are good educational resources for 'education for the future'. Why?

C. Review

- Use OHT 5 to review the main points of the workshop from the participants.
- Ask them to take out the icebreaker sheet (Resource 1) which they filled in at the beginning of the workshop.
- Ask them 'Are the issues this simple?' 'Do you feel differently now?'
- Discuss the follow-on activity at the bottom of the icebreaker sheet.
- Follow-on Take-home Activity: Using the cartoon in the icebreaker exercise, plan a 40 minute classroom activity. Make sure your activity integrates both development and environmental issues and embodies the pupil outcomes discussed in the workshop.

OHT'S

OHT 1

Workshop Overview

1. Environmental education and development education - mutually exclusive?

2. Exploring the links between environmental education and development education.

3. Education 'For the Future'.

4. Review

OHT'S

OHT 2

DEVELOPMENT EDUCATION?
ENVIRONMENTAL EDUCATION?
BOTH? NEITHER?

DE	EE	BOTH	N	TOPIC
				1. Foreign Aid
				2. Pollution of Rivers
				3. Recycling of Plastic Bags
				4. War and Peace Issues
				5. Hugging Trees
				6. Rainforest Devastation in Amazonia
				7. Tourism and its Impacts
				8. Ecologically Sustainable Development
				9. Over Population in the Third World
				10. Over Consumption in the Developed World
				11. Politics
				12. Women and the Division of Labour
				13. Racism
				14. Sampling of Stream Water
				15. Examining the Animals in Leaf Litter
				16. Hunger
				17. Refugees
				18. Resources - their Distribution, Need, Consumption
				19. Indigenous People's Land Rights
				20. The Declaration of Protected Areas
				21. Acid Rain in Europe
				22. Poverty
				23. Biotechnology
				24. Multinational Companies

OHT 3

AN EASY PUZZLE!

Why is it difficult to conceive environmental education and development education as being discrete fields?

1. Development decisions for human communities cannot disregard their environmental impact.

2. Environmental conservation is not contrary to development.

3. The local, national and international are interconnected.

4. Real learning involves looking to the future as well as the past and present.

5. The process of learning 'for the environment' and 'for better quality of life for all', is the same. Participants require the attitudes and skills necessary for active participation in the political process so they can become subjects rather than objects in their own history.

OHT's

OHT 4

Important Pupil Outcomes

1. Pupil motivation
2. Anticipating change
3. Critical thinking
4. Clarifying values
5. Decision making
6. Creative imagination
7. A better world
8. Responsible citizenship

OHT'S

OHT 5

MAIN POINTS OF THE WORKSHOP

- Development education and environmental education are not mutually exclusive

- Both types of educations have common content at their broadest sense

- Both involve education 'for the future'

- Both require a common approach and the process of learning is as important as the content

RESOURCE 1

CARTOON WORKSHEET

Source: Moir, *Sydney Morning Herald*, 28.8.92.



Answer the following questions at the beginning of the workshop.

1. What is your initial reaction to this cartoon?
2. What is the main issue involved in the cartoon?
3. Are the issues of environment and development an either/or situation? Is this really what development and environment issues are about or are the issues much more complex?

Please put this sheet away now till the end of the workshop.

Follow-on activity:

Using the cartoon devise a 40 minute classroom activity. Make sure your activity integrates both development and environmental issues and embodies the pupil outcomes discussed in the workshop.

RESOURCE 2

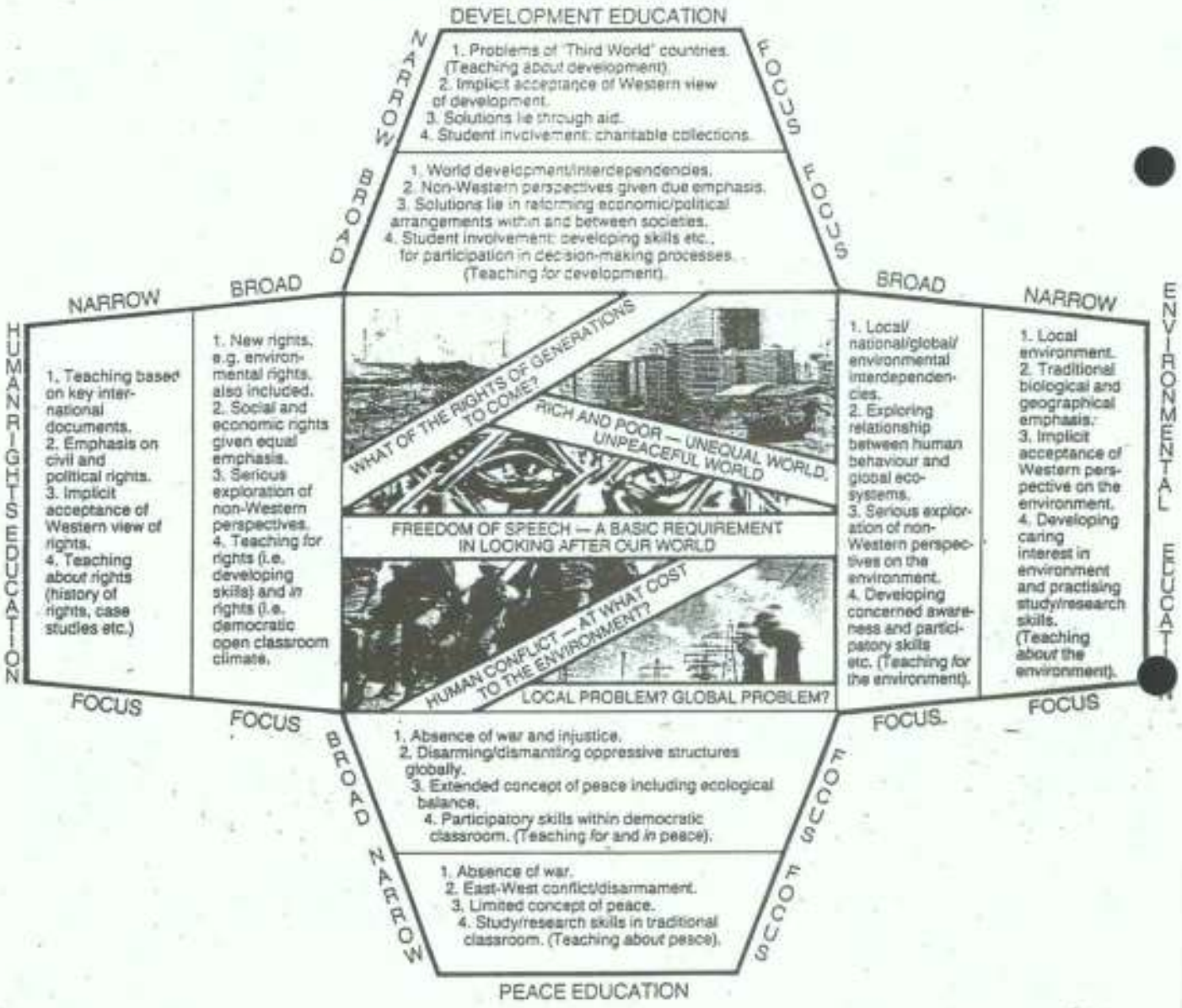
TOPICS FOR INVESTIGATION

FOREIGN AID	POLLUTION OF RIVERS	RECYCLING OF PLASTIC BAGS	WAR AND PEACE
HUGGING TREES	RAINFOREST DEVASTATION	TOURISM AND ITS IMPACTS	ECOLOGICALLY SUSTAINABLE DEVELOPMENT
OVER-CONSUMPTION IN THE DEVEL-OPED WORLD	POLITICS	WOMEN AND THE DIVISION OF LABOUR	RACISM
SAMPLING OF STREAM WATER	EXAMINING ANIMALS IN LEAF LITTER	HUNGER	REFUGEES
RESOURCES-THEIR DISTRIBUTION, NEEDS, CONSUMPTION	INDIGENOUS PEOPLE'S LAND RIGHTS	THE DECLARATION OF PROTECTED AREAS	ACID RAIN IN EUROPE
POVERTY	BIO-TECHNOLOGY	MULTI-NATIONAL COMPANIES	OVER-POPULATION IN THE THIRD WORLD

RESOURCE 3

FOUR EDUCATIONS? ONE EDUCATION?

Source: Greig, S., Pike, G. and Selby, D. (1987) *Earthrights: Education As If the Planet Really Mattered*, WWF, London, pp 23-38.



RESOURCE 4

WHO OWNS THE REEFS?

Source: Ocean Fisheries, in WWF (1989) *Only One Earth*, WWF Multi-media Education Pack, WWF UK, Godalming.

EXTRACT 1

The traditional custom of Solomon Islands is that any Solomon Islander is free to fish on the open sea, but that the shallow coastal waters of the reefs and lagoons belong to particular groups of people in the same way that land does. But when most Solomon Islanders talk of "owning" land or coastal fishing grounds they mean something quite different from the kind of "ownership" which Europeans practise and which they introduced to Solomon Islands as part of British colonial law. The best way to see who natural resources belong to is to work out what *rights* various people have on the reefs and lagoons.

The first thing to remember about Solomon Islanders' rights in their lands and coastal waters is that they are usually shared by groups of relatives, not held by individuals as among Europeans. People inherit their rights in land and coastal waters from their ancestors and they pass them on to their children. An area is controlled and managed by a group of people who share the same ancestors, either through a line of fathers and sons, or a line of mothers and daughters, depending on the custom of their district. They are said to have "primary rights", which means that, as individuals, they can use the natural resources of the land or coastal waters. They can also join with others in their group in deciding whether to allow other people to use these resources too. But many of these other people are also relatives, and as such they may have "secondary rights" which allow them to *use* natural resources but not to have a say in who else is allowed to use them. These people would in any case, have primary rights in another area elsewhere. In English, Solomon Islanders often speak of people with primary rights as "owning" the resources and those with secondary rights as "using" them.

Exactly what primary or secondary rights entitle people to do varies in different areas and can become very complicated. But above all they allow people a choice of where to live, make their gardens or fish, while ensuring that each area is managed by a particular group, and that each group inherits an area which it can manage. In the past, any group which had primary rights in more resources than it needed for a living was pleased to welcome others in order to share the resources and to increase the size and strength of their local community. As long as they are only producing food for themselves, people with secondary rights can use the land and sea without threatening the interests of their hosts who have the primary rights. The forest which they clear for their gardens will eventually regrow and the fish and shellfish replenish themselves. When these resources run low the leaders of the primary rights group can restrict gardening and fishing accordingly. When necessary some people may be asked to move elsewhere to live. In the past this flexible system of land and fishing rights conserved natural resources and distributed them according to people's needs.

But what happens when there is money to be made from these natural resources? For example, what should happen when someone wants to sell timber to saw mills or make plantations of coconuts which occupy the land for many years? What if someone wants to catch extra fish to sell in a town market? What if there is money to be made by selling coral reef fish as bait to commercial tuna fishing boats? The problem is that the traditional system of resource rights does not allow for this so called "cash economy". If it is the people with primary rights who should gain, how should they divide up the money? And what about all their relatives who have inherited secondary rights who may then no longer be able to use the resources themselves? These are some of the questions facing Solomon Islanders today in their search for economic development and prosperity. There are no easy answers to these questions.

Source: Ben Burt, Museum of Mankind, an anthropologist who has worked in Solomon Islands.

EXTRACT 2

Consider the issue of baitfishing in a little more detail. Many of the tuna in the open ocean around Solomon Islands are caught by the 'pole-and-line' technique. The success of this fishing depends on a constant supply of live bait fish taken from lagoons and reefs around the islands. At the moment, these bait fish are not harvested by the people from the communities with traditional fishing rights. Instead, they are harvested by the employees of the two big tuna companies in the Solomon Islands. The company then pays 'bait fish rent' to the people who have traditional rights on the reefs and lagoons in question. To make it easier to calculate rent payments the government has set up a system of bait fish areas.

The boundaries of these areas are related to the traditional boundaries which mark out where different groups of people hold traditional fishing rights. However, the boundaries rarely correspond exactly. As the accompanying map shows, this can lead to disputes about which groups of people should receive baitfish rent.

Based on: "A tradtional base for inshore fisheries in Solomon Islands". Graham Baines. UNESCO. 1985

EXTRACT 3

Numerous criticisms about how baitfish areas are mapped can be made . . . Apparently, boundaries have been determined on the basis of discussions with individuals or groups claiming traditional fishing rights in an area. But no-one has investigated whether these claims are genuine. Also, there have not been opportunities for other individuals or groups to make counter-claims. Some of these counter-claims are likely to be genuine . . . There have also been reports of arbitrary changes of baitfish area boundaries . . . Not surprisingly then, there have been numerous complaints . . .

The mapping of baitfish areas has certainly paid attention to some aspects of traditional fisheries rights, a requirement for development of fisheries in Solomon Islands. However, the approach has been too simplistic and too hurried. The above indicates that the way baitfish mapping is presently carried out is inadequate as a basis for fisheries development in Solomon Islands . . . It points to a need for a fresh and more detailed look at traditional fisheries as they exist today, before further commercial development takes place in coastal areas subject to traditional control . . .

Current national government policy stresses that matters arising about traditional land and fishing rights need to be discussed at local government level — in Area Councils and Provincial Assemblies. With some technical advice from relevant national government departments, it should be possible at the local level to work out, by general agreement, a 'basic fisheries tradition' for each culture group. Among groups long interconnected by trade, marriage and warfare such a tradition is likely to be shared. Defining a 'basic fisheries tradition' need not involve detailed description. Key elements of tradition should be identified and agreed upon by the communities within a culture group. Key elements to consider include: the location of traditional areas and their boundaries, primary and secondary rights and who is responsible for the management of traditional fisheries areas. Another vital element to think about is the principles for distribution of the benefits resulting from the exploitation of natural resources. The baitfishing issue shows how important this is. At the moment, complaints frequently arise because of deficiencies and/or injustices in the distribution of baitfish rents by representatives of primary rights groups (the government chooses not to get involved in how baitfish rent should be distributed) . . .

Examination of each 'basic fisheries tradition' at the provincial administrative level would make it possible to establish a regional framework and guidelines for inshore fisheries development — with allowance for major differences of tradition within the province.

Wherever possible, an effort should be made to identify which guidelines could be applied on a national basis, throughout all seven provinces. It would be a mistake, however, to try to override major regional and/or cultural differences.

Based on: "A tradtional base for inshore fisheries in Solomon Islands". Graham Baines. UNESCO. 1985

QUESTIONS AND ACTIVITIES

Read through Extract 1 on this activity sheet and then answer questions 1 to 3.

1 What do most Solomon Islanders mean when they talk about "owning" a piece of land or a coral reef? What would most Europeans mean if he or she said "I own this piece of land?"

2 In paragraph 3 of Extract 1 Ben Burt says: "in the past this flexible system of land and fishing rights conserved natural resources and distributed them according to people's needs." In your own words, briefly described how in earlier times this system might have worked for a typical coral reef in Solomon Islands.

Nowadays in Solomon Islands, unlike in the past, money can be made by harvesting the country's natural resources. Briefly consider whether "the cash economy" that now exists in the Solomons makes it more or less likely that natural resources from a coral reef are conserved and distributed according to people's needs.

3 Finally, just think about the case when someone with primary rights on a coral reef in Solomon Islands decides to invest in a larger fishing boat with new fishing equipment so that he can catch more fish to sell in the local market. This person has invested additional time and money to catch fish so should he get all the additional benefits? What about the other people with primary rights on the coral reef? What about those with secondary rights?

Now read Extract 2 and study the map showing typical fishing area boundaries. Then answer questions 4-7.

4 Look at the map. If a baitfishing boat caught fish in position X which group of people (Village A or B) would receive the baitfish rent from the fishing company?

5 If a boat caught fish in position Y which group of people would receive baitfish rent from the fishing company?

6 In which of the above situations might villages A & B disagree about who receives baitfish rent? Briefly say why.

Such disagreements have in fact occurred. What attention should the government pay to criticisms from local people about the way it marks out baitfish area boundaries using prominent landscape features? Briefly justify your answer.

7 A frequent criticism villagers raise against baitfishing boats is that they overfish the reefs and lagoons, thereby threatening local fishermen's livelihoods. At the moment, overfishing has not been proved. However, what is beyond dispute is that large quantities of baitfish are wasted — even the fishing companies accept this. Basically, wastage occurs because the companies pay only small baitfish rents to villages and so the baitfish are cheap. Sarah Meltzoff, who has studied in detail the tuna fishing industry in Solomon Islands, believes that the companies should pay higher baitfish rents. Of course, it's very likely the companies would object to any rent increases — after all, it is the fishing company owners and their fishermen who invest time and money in baitfishing.

Using the information in the paragraph above, imagine you are a member of Solomon Islands Fisheries Division. A government decision has been made to make a small increase in baitfish rents and this needs to be announced on national radio. You have been asked to make the radio announcement! Remembering that you need to "do a good PR job" for the Fisheries Division, prepare (in writing) your radio announcment. In the announcement clearly and very briefly explain how the decision will benefit villages. Also give one reason why the government made only a limited rent increase.

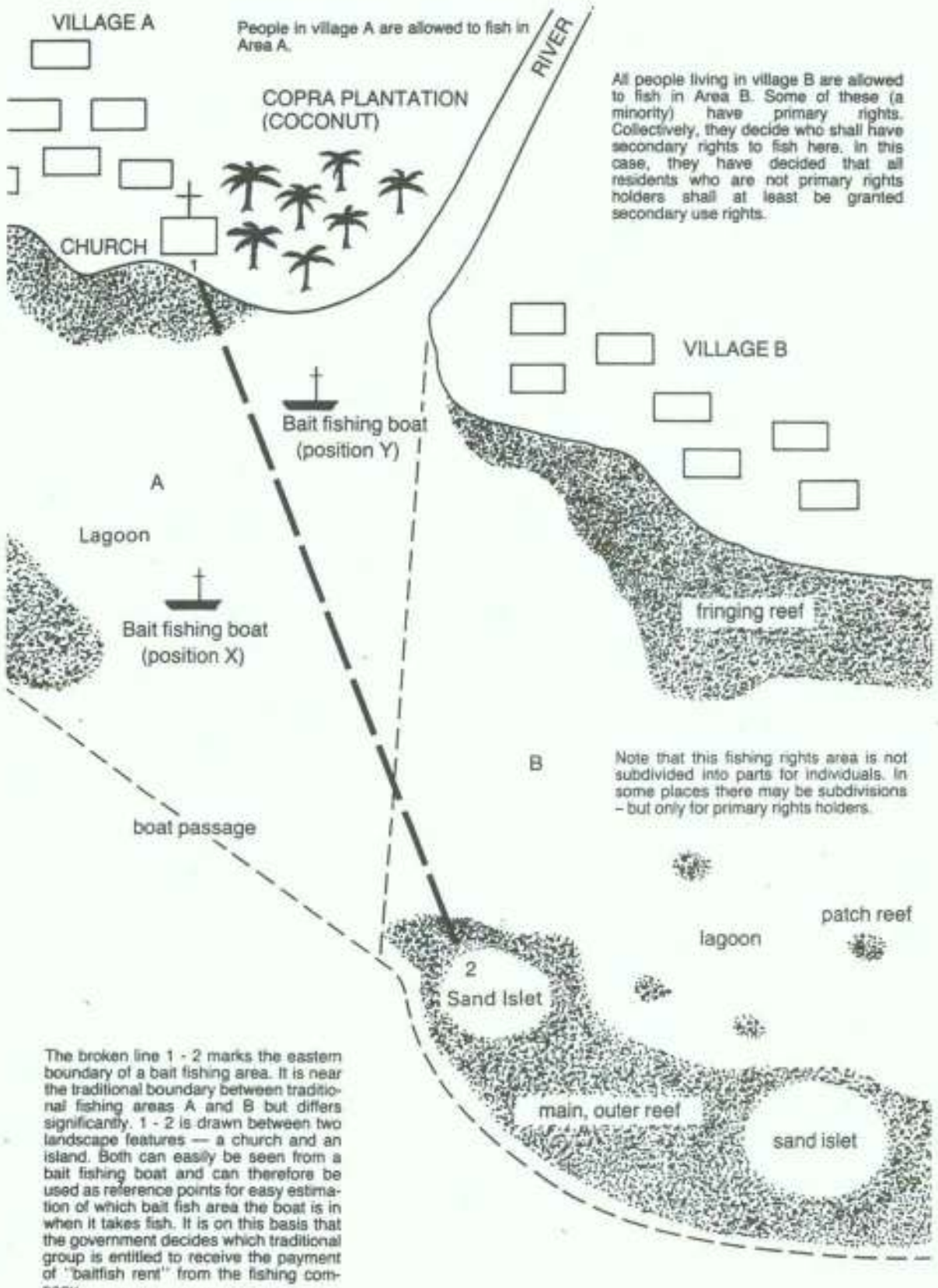
Finally read Extract 3 and then answer the following questions.

8 Baines identifies several "inadequacies" with the way baitfish areas are marked out. What are they?

9 In Graham Baines' view, why should the development of modern inshore fisheries be based on traditional rights?

10 Baines proposes some guidelines for the future development of inshore fisheries in Solomon Islands. Working together in small discussion groups, list his guidelines. In your group discuss whether or not his guidelines are: a) desirable b) feasible. Discuss how you think the majority of people at village level would react to Baines' guidelines.

Map showing typical fishing area boundaries



The broken line 1 - 2 marks the eastern boundary of a bait fishing area. It is near the traditional boundary between traditional fishing areas A and B but differs significantly. 1 - 2 is drawn between two landscape features — a church and an island. Both can easily be seen from a bait fishing boat and can therefore be used as reference points for easy estimation of which bait fish area the boat is in when it takes fish. It is on this basis that the government decides which traditional group is entitled to receive the payment of "baitfish rent" from the fishing company.

RESOURCE 5

LAND USE CONFLICT SIMULATION

Source: The Simulation Game about Landuse Conflict, in L. Dawson (1992) *How to Interpret Natural and Historical Resources*, World Wildlife Fund, Washington, DC.

Objectives:
Participants will be able to explain why the solutions to many environmental problems lie in the political process and why many environmental problems have no right or wrong answers. They will also be able to list reasons why it is so difficult to identify and implement environmental priorities for communities.

Age Group:
upper primary through adult

Time:
1 to 1 $^{1}/_{2}$ hours

Setting:
a quiet outdoor area with seating, a classroom, or a meeting room

Materials:
copies of role cards on page 89-91, paper

Background

Many environmental problems stimulate a number of interest groups into action. These groups often have strong interests in issues such as:

- land-use decisions;
- prevention of air, soil, and water pollution;
- methods of cleaning up pollution;
- rights to various natural resources;
- development versus conservation; and
- saving endangered species.

All of these issues can force people into fierce opposition. Basic beliefs about economics, human rights, consumer patterns, and even survival may be at stake. Often short-term goals are in conflict with long-term ones. With all of these conflicts arising, it is no wonder that communities have such a difficult time resolving environmental issues.

Using simulations, such as the one presented in this activity, is an environmental education method that can help participants analyze complicated issues. Having participants act out the roles of different community members often makes them more sensitive to other points of view. Sometimes this new awareness can help promote consensus in resolving a controversial issue.

Procedure

1. Divide the group into seven teams: Indigenous People, Subsistence Farmers, Cattle Ranchers, Research Scientists, Government Officials, Lumber Company Officials, and Coffee Growers. Ask each team to pick an appropriate name for their group and to make a paper label with the team's name on it.

2. Tell the group that Monte Verde Tropical Rain Forest is an imaginary large forest that has been used by people for limited logging and small farms. Now, several groups are proposing that they be allowed to use the forest for large-scale operations such as logging, growing coffee, and raising cattle. Such uses would affect the small farmers and indigenous people who have lived in the forest for a long time. All the different groups are arguing about the so-called "right" way to manage the forest.

The government must decide what to do. Officials have scheduled a public hearing at which all interested parties will present their cases. The teams must prepare arguments or briefs to be presented at the hearing. The Government Officials team will hear all the arguments and then decide what to do.

3. Give each team a copy of its appropriate role card. Each team—except the Government Officials—must prepare a four-minute oral brief that summarizes the team's opinion on how the Monte Verde Tropical Rain Forest should be used over the next twenty years. Each team should try to persuade the Government Officials that its position is correct. Allow ten to fifteen minutes for the groups to prepare for the hearing.

4. The Government Officials should read their role card. Then they should appoint a member to chair the hearing, another to time the testimonies at the hearing, and a third to go around and find out who will be testifying at the hearing. Together, the officials should decide the order of testimonies and prepare an agenda. They may also want to discuss any opinions or feelings they already have on the use of Monte Verde Tropical Rain Forest.

5. The chair should call the hearing to order and go over the agenda. As the speakers present their cases, each Government Official should take notes. Officials may spend one to two minutes to ask a few questions after each brief is presented.

6. When all the teams have been heard from, the Government Officials may debate in private for five minutes. They must come to an agreement on a general land-use plan for the Monte Verde Tropical Rain Forest. (*Note:* They do not have to choose just one land-use plan—they can combine uses or suggest other alternatives.)

7. The chair will then read or present the officials' decision to the group.

8. Lead a group discussion on the solution adopted by the officials. You might discuss:

- other solutions,
- how people felt portraying a role that felt new or strange to them,
- how such decisions are actually made in your locale,
- whether hearing other testimonies made anyone change his or her ideas or feelings on the subject, and
- whether there are any land-use issues in your community. If so, who are the players? Are they equally likely to be heard by decision makers? Why or why not?

ROLE CARDS FOR LAND USE CONFLICT SIMULATION

Note: Each of these roles will be played by a team of participants. Each person can make up his or her specific role within the team. For instance, the Cattle Ranchers team might be composed of the ranch owner, the ranch manager, ranch hands, and an investor.

CATTLE RANCHERS

You are part of a large cattle company with great amounts of money to invest in a ranch in the Monte Verde Tropical Rain Forest. You know that there is a great demand for beef in foreign countries and that you will not have any trouble selling your cattle for export. The government is selling land in the forest cheaply to promote the development of cash crops for export and to increase colonization efforts. Your company is willing to buy a very large piece of land. You have heard that there is trouble with ranching on forest land: People have settled there without owning the land, there are many diseases that can kill the cattle, and the pasture wears out after only a few years. But you are willing to take the chance. If your ranch succeeds, your company could become one of the largest in the nation. If the ranch fails, or the price of beef in foreign markets decreases rapidly, your company could lose a substantial amount of its investment. You will employ a large work force to clear the land. But after that, only a few seasonal workers will work on your ranch.

INDIGENOUS PEOPLE

You depend on the Monte Verde Tropical Rain Forest for your entire way of life. Your tribe lives in a small village in a remote area of the forest, but you need a large area of forest to hunt, fish, and gather food. You use many plants for food, medicines, and other materials (manioc, Brazil nuts, oil palms, rubber trees), and the fish and other animals of the forest provide you with necessary protein. Your traditions and beliefs are based on your view of the forest as provider. While you depend on the forest and use it freely, your culture does not believe that the land can be owned—you are allowed to use it, but it is not yours. If the forest is destroyed, you will lose not only the basics needed for survival, but also much of your cultural and spiritual heritage.

LUMBER COMPANY OFFICIALS

You work for a large lumber company in your country, and you are responsible for making decisions about where to cut timber in the Monte Verde Tropical Rain Forest. You know that there is a lot of valuable wood in the forest, but it is difficult and expensive to harvest. Your job is to maximize your company's profits by making it as cheap as possible to get the timber from the forest to the buyer. The trees you want to sell grow among others that are not valuable. In each area your company harvests, you must decide whether it is better to do selective cutting, in which you take only the valuable trees, or clear cutting, in which all the trees are cut down. You look for areas that are not too isolated and that have high concentrations of valuable trees so that the money received from timber sales is higher than the cost of building the roads and of harvesting the trees and transporting them. Problems you might encounter in your operations include other groups (Subsistence Farmers or Indigenous People) who may be living on potential harvest areas, heavy rains that make transportation difficult, and conservationists who want to prevent you from using the forest because it is the home of rare animals and plants.

COFFEE GROWERS

Coffee is one of the major exports of your country. There is a great demand for coffee in other countries, and you can make a lot of money by planting large areas of the Monte Verde Tropical Rain Forest with coffee trees. The government is selling land there very cheaply, and you would like to buy a large piece to clear and plant with coffee. Your goal is to make the most amount of money in as little time as possible. You know that the forest soil is not very good for crops, but there is so much forest that you believe you can clear more land if your yields start decreasing. Some of the obstacles to your using the forest might be: people living on the land you want to clear—*campesinos* or indigenous people; opposition from conservationists, because clearing the forest for growing coffee could result in extensive erosion on hillsides or extinction of species due to habitat destruction; and outbreaks of pests or diseases that destroy your crop.

GOVERNMENT OFFICIALS

You are the ones who have to decide what to do with the remaining Monte Verde Tropical Rain Forest areas. You must listen to all the groups that want to use the forest and then tell them what should be done. As a government of the whole nation, you are concerned with the forest's ability to increase your country's wealth, which will help modernize your society. You know that there are many important things the tropical forest can do for development, but you also realize that tropical forests around the world are vanishing and may disappear altogether if this destruction is not stopped.

SUBSISTENCE FARMERS

You moved into the Monte Verde Tropical Rain Forest after a lumber company built a road into the virgin forest to haul out trees. You cleared a small plot of land not far from the road and planted some crops, such as manioc and corn. You depend on your land to grow all the food you need to eat. There is little, if any, extra to sell for cash. You have a spouse and four children, but only one child is old enough to help on the farm. You do not own the land you live on, but, because of your work, you feel it belongs to you. You have also cleared another plot of land nearby because the soil on your present plot is getting worn out. Other farmers have moved into your area, and you are worried that they will take over the new plot of land first. In addition to your worries about being able to grow your crops, a major concern is that cattle ranchers or coffee growers will buy legal title to your land from the government and will make you and your neighbors leave, with nowhere else to go.

RESEARCH SCIENTISTS

The main reason you are interested in the Monte Verde Tropical Rain Forest is its usefulness as a genetic resource, as well as for research. You know that there are probably large numbers of plants and animals that may be useful to people but that have not yet been discovered. You are concerned about all the groups of people using the forest because you know that species are disappearing almost every day due to what you consider unwise management practices. You would like to see much of the tropical forest in your country conserved through the creation of parks and natural areas, but you realize that there are already many people living in these areas. You think the government should plan now to save the remaining forest areas and protect them with strict regulations. You also think that the government should provide more opportunities for scientists to study the forest. You believe that some development of the forest would be acceptable, but should be carefully planned and regulated.

RESOURCE 6

SOLUTIONS FOR POLLUTION

Source: Huckle, J., (coordinator) (1988) *What We Consume: Unit 8 China*, WWF UK and Bedford College of Higher Education in conjunction with Richmond Publishing Company, UK.

. . . the post-1949 decades could be, with simplification but far from unjustly, described as an all-out attempt to turn the former astounding imperial capital of the Jin, Yuan, Ming, and Qing dynasties into a large factory compound where there would be . . plenty of dirty air, polluted water, stupefying noise and hardly a trace of living nature.
Vaclav Smil, 1984

Economic development and environmental protection can go ahead proportionately, in a planned and harmonious way, to promote the progress of the modernization programme. . . We have spent several years legislating for the environment, but enforcement is more difficult and complicated.
Qu Geping and Li Jinchang, 1984

PURPOSE

Pupils are introduced to the nature and causes of pollution in Beijing and to attempts to solve pollution problems by educational, political and technological means. Particular attention is given to the nature and scope of China's Environmental Protection Law and the reasons why environmental pollution remains a serious problem in China.

KEY QUESTIONS	A3, B3-5, C3
KEY IDEA	4

PREPARATION

Before using this activity teachers should read the background notes on China's Environmental Protection Law and prepare multiple copies of Activity Sheets 8.4.1, 8.4.2 and 8.4.3.

PROCEDURE

1 The teacher introduces Activity Sheet 8.4.1 by telling the pupils about environmental pollution in Beijing. Relevant information can be found on the Activity Sheet and in sections 6.2.1, 4.1.1, 3.5.2 and 2.5.1 of Vaclav Smil's *The Bad Earth* (see page 14).

2 Next, the teacher reads through the Activity Sheets with the pupils and divides them into small groups to carry out the tasks. S/he should break for discussion at three stages: after pupils have matched laws and problems and suggested reasons for continuing pollution (8.4.1); after they have proposed three different types of solution to one problem (8.4.2), and finally, to compare their completed tables (8.4.3).

Pupils should be encouraged to ask for help with comprehension and carrying out the tasks. The completed table will look something like this:

	AIR	WATER	NOISE	DISEASE
EDUCATIONAL SOLUTION	3		3	4
POLITICAL SOLUTION	7	6,2	1,9	4,8
TECHNOLOGICAL SOLUTION	5	6,2	9	8

3 Follow-up work to the Activity Sheets could include a discussion of China's Environmental Protection Law:

On what principles is the law based?
How does it seek to protect the environment?
What penalties are there for breaking the law?
How is environmental protection organised in China?
What is the role of research and propaganda in environmental protection?

The teacher should emphasise the gap between intentions and reality and the difficulties of closing this gap in a developing country with limited resources.

BACKGROUND

Environmental pollution in Beijing
As the news cutting on page 55 suggests, Beijing experiences severe problems of air, water and noise pollution. The city's built-up area increased threefold between 1949 and 1979 and in that time it became a major centre for heavy industry. Spending on infrastructure such as reservoirs, sewers and water treatment plants has not kept pace with this growth and the resulting pollution problems are made worse by Beijing's natural location. Its arid climate accentuates problems of water scarcity and quality. Calm atmospheric conditions with temperature inversions often concentrate air pollution.

Environmental Protection in China
Between 1949 and the early 1970s environmental management in China was piecemeal and the quality of the environment was not considered a major issue. Chinese delegates to the Stockholm Conference in 1972 stressed the need for development with environmental protection and the State Council established an Office of Environmental Protection in 1974.

Environmental protection was written into the constitution of the People's Republic of China in 1978, a Law of Environmental Protection adopted in 1979 and a Ministry of Urban and Rural Construction and Environmental Protection established in 1982. This Ministry co-ordinates and supervises the state's environmental protection efforts and following a period of legislation its main focus is now law enforcement. Environmental protection was one of the ten major tasks of the Sixth Five-Year Plan (1981-1985).

Environmental protection in China follows the following guidelines :

a) **Overall planning and rational distribution while developing industrial and agricultural production.** Chinese planning seeks to balance relations between industry and agriculture, cities and rural areas, economic development and environmental protection and maintenance of the ecosystem. The environment should be protected and improved in the course of economic development.

b) **Comprehensive utilization and conversion of harm to good.** The rational use of resources and energy requires multiple use and the recycling of waste.

c) **Relying on the masses and mobilizing everyone's effort.** Awakening and educating people to take initiatives in maintaining their living environment and protecting the natural environment.

d) **In the final analysis, to protect the environment is to protect the health of the people and to develop the productivity of society.**

These guidelines are implemented via policies which seek a rational distribution of industrial centres and cities and the control of pollution. The Chinese believe that it is easier to manage the environment in small and medium-sized cities which are integrated with rural areas and where industry is combined with agriculture. They seek to control the size of large cities such as Beijing and encourage dispersal via satellite towns. The varied methods used to control pollution include new technology, stronger environmental management, relocation, fines and punishments, and environmental impact assessment for new, expanded or renovated projects. China's Environmental Protection Law (see Qu Geping & Lee, 1984) embodies these principles and policies and is intended to shape economic development so that it conforms to "natural and economic laws".

Environmental protection is seen as part of national economic planning and development. In theory, environmental protection departments participate in setting targets and norms for regions and enterprises and supervise the execution of yearly plans. Environmental criteria are used in assessing managerial and worker efficiency and determining material rewards. Environmental management seeks to guide the process of material exchange with nature towards a benign cycle, and for this reason multiple use and recycling are stressed. Awards, tax exemptions and fines are used to encourage this type of management.

In addition to principles and policies, the Law sets out a framework of environmental management organisations together with their functions and powers. Chinese commentators admit that enforcement is more difficult than legislation. There is a need to strengthen legal and environmental education and to create monitoring, supervisory, inspection and law enforcement agencies.

At the top of the environmental protection pyramid in China is the Ministry of Urban and Rural Construction and Environmental Protection, although there are environmental protection departments within other

ministries such as power and forestry. Lower down the pyramid are the environmental protection bureaux of provinces, regions and municipalities and the environmental protection institutions in most prefectures, cities, counties and enterprises. These are responsible for enacting local laws on environmental management which implement the state law and collecting their own funds for environmental protection.

The chapter in the Environmental Protection Law on pollution lists nine kinds of pollutants to be dealt with (waste gas, waste water, solid waste, dust, garbage, radioactive material, noise, vibration and odours). Educational, economic, political and technological solutions are all employed and fines are fixed at a high level to encourage early environmental management and provide more funds for environmental protection. In serious cases managers will be disciplined by an economic court.

The Chinese make much use of propaganda and education to raise awareness of environmental problems and related solutions. The media are used to stress the need for environmental protection and trade unions, scientific associations, the youth league, women's federations and other mass organisations may be mobilized to engage in environmental campaigns (see Activities 8.9 and 8.10). Neighbourhood committees in Beijing may have supervisory groups for environmental protection and many initiatives on the environment start at the local level (see Activity 8.5).

The nine solutions to pollution outlined on the Activity Sheet are based on press releases from the Xinhua Agency during 1984/5.

Link with UK Conservation Strategy

The Livable City report deals with urban air and water pollution. The report calls for greater controls on vehicle exhausts and after EC pressure there has been some progress on the introduction of lead-free petrol. It also seeks better sewage treatment, greater controls on discharges to rivers and faster progress in improving river quality in urban areas. The future of these recommendations will be much affected by the likely privatisation of the water supply industry. *Seven Bridges to the Future*, another of the reports in UKCS, recognizes pollution control as a potential sunrise industry with great potential to revive the economy, to win export orders and to create jobs.

READING

Managing the Environment in China, Qu Geping and Woyen Lee, Tycooly International, 1984.

"China's Struggle to Safeguard Her Environment", Qu Geping, *China Reconstructs*, April 1986.

"The Origins of Environmental Management in China", Wu Zijin, in: *Learning from China ? Development and Environment in Third World Countries*, Bernhard Glaeser (ed), Allen & Unwin, 1987.

"Urban Environmental Protection Well Under Way", Qu Geping, *Bejing Review*, 12.1.87.

"China's Industrial Pollution Survey", Qu Geping, *China Reconstructs*, August 1988.

ACTIVITY SHEET 8.4.1

POLLUTION AND THE LAW

In this set of activities you will find out about pollution in Beijing; examine some of the laws which are meant to control pollution, and suggest solutions to some of the pollution problems. You will then compare your suggestions with some of the solutions actually used in the city in the mid 1980s.

First you need to know about FOUR POLLUTION PROBLEMS in Beijing:

AIR POLLUTION

Beijing is a large city with a lot of heavy industry such as iron and steel works. Most of the factories and houses get their energy by burning unwashed coal. The boilers, furnaces and stoves they use are often old and inefficient. Much of the energy in the coal is wasted and large amounts of soot, sulphur dioxide and dust escape from low chimneys into the air. Weather conditions in winter often produce cold still air. The pollution is then concentrated in fogs which are unhealthy and prevent sunlight from reaching the ground.

WATER POLLUTION

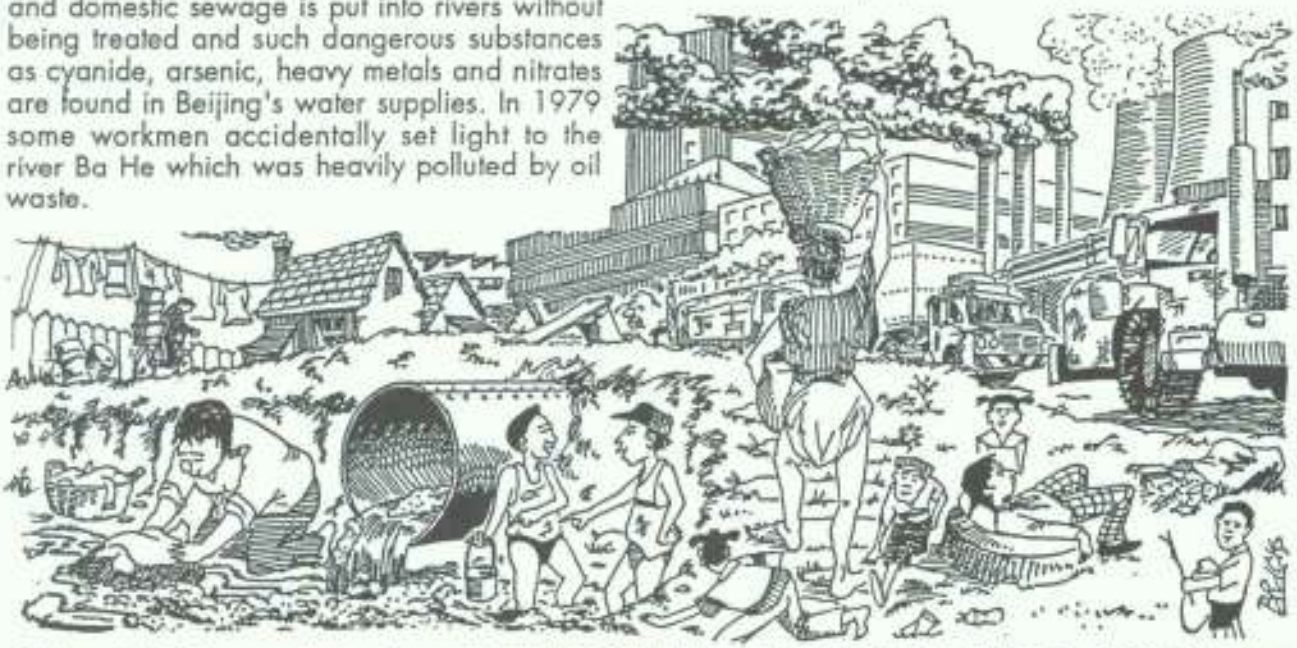
Beijing is in an area of low rainfall and suffers from drought every five to seven years. Although water is scarce, it is not used in the best way. A lot of liquid waste from factories and domestic sewage is put into rivers without being treated and such dangerous substances as cyanide, arsenic, heavy metals and nitrates are found in Beijing's water supplies. In 1979 some workmen accidentally set light to the river Ba He which was heavily polluted by oil waste.

NOISE POLLUTION

Some visitors describe Beijing as the noisiest city in the world. Roads are very crowded and there is a constant sounding of horns by taxis, buses, cars and trucks. Poorly tuned engines, broken silencers and blaring transistor radios add to the street noise. Noisy factories can be found in the same street as houses.

OCCUPATIONAL DISEASE

Of the 1,700,000 workers employed in 7,500 factories in Beijing in 1984, more than 370,000 were exposed to such harmful substances as lead, asbestos and mercury, in their workplaces. The number of cases of cancer and of lung and heart disease amongst workers increased in the 1970s. Between 1974 and 1978 the number of cases of lung cancer in Beijing increased by 30%.



Although China adopted an ENVIRONMENTAL PROTECTION LAW in 1979, these pollution problems have not been yet been solved.

Can you match the following FOUR ARTICLES from the Environmental Protection Law to the four problems you have just read about. Write the name of the problem in the box under the article.

ARTICLE 2

The function of the Environmental Protection Law of the People's Republic of China is to ensure, during the construction of a modernized socialist state, rational use of natural environment, prevention and elimination of environmental pollution and damage to ecosystems, in order to create a clean and favourable living and working environment, protect the health of the people and promote economic development.

ARTICLE 19

All smoke discharge devices, industrial furnaces, motor vehicles, ships etc, shall take effective measures to eliminate smoke and dust, and discharge of noxious gas shall be in compliance with the standards laid down by the State.

Develop and use on a big scale coal gas, liquefied petroleum gas (LPG), natural gas, marsh gas, solar energy, terrestrial heat and other non-polluting or less polluting energy sources. In the cities, district central heating should be promoted.

ARTICLE 20

Dumping garbage and waste residues into the waters is prohibited.

Discharge of sewage shall be in compliance with the standards set by the State.

Take strong measures to protect the sources of drinking water from contamination and gradually perfect the sewage discharge piping system and sewage purification facilities.

ARTICLE 22

Step up control of noise and vibration in urban and industrial districts. All kinds of noisy machines, motor vehicles, aircraft etc. with heavy vibrations are required to install noise suppressors and anti-vibration devices.

The full Environmental Protection Law contains 33 articles. Some of the articles not printed here also deal with air, water, noise and occupational disease.

Before you go on to the next activity, can you think of some reasons why there were still pollution problems in Beijing five to ten years after the Environmental Protection Law was passed?

Make a note of the reasons you suggest. . . .

ACTIVITY SHEET 8.4.2

SOLUTIONS FOR POLLUTION

Now compare your ideas about why pollution problems continue with the reasons suggested by Qu Geping, director of China's State Environmental Protection Board in 1987:

* inadequate EDUCATION about environmental protection. (People do not know about the need to stop pollution and how to go about it)
* inadequate ENVIRONMENTAL PROTECTION ORGANIZATIONS and a LACK OF TRAINED PROFESSIONALS in the field. (There are not the organizations and people to enforce the law.)
* Cadres (officials), especially at the grass-roots level, who CONCENTRATE ON PRODUCTION BUT NEGLECT ENVIRONMENTAL CONCERNS. (Such people as factory managers do not show enough concern about pollution.)
* A lack of attention to environmental protection when local governments and economic departments DRAW UP PLANS AND ALLOCATE FUNDS and begin construction and renovation projects. (Planners are not concerned enough about pollution.)
* As a developing country, China's economic and technological level remains low, and the state LACKS FUNDS AND EQUIPMENT for environmental protection. (China does not have enough money, or the right technology to solve all its pollution problems in a short time.)

Qu Geping suggests that Beijing's pollution problems could be reduced by:

EDUCATIONAL SOLUTIONS which make people more aware of pollution problems and encourage them to clean their environment.

POLITICAL SOLUTIONS which introduce laws on pollution. Politicians can also encourage people to obey the laws by punishing polluters and rewarding those who cut down pollution.

TECHNOLOGICAL SOLUTIONS which involve cleaner ways of using energy and materials and create less waste.

Now choose ONE of the four pollution problems in Beijing: air, water, noise or occupational disease. Suggest one educational, one political and one technological solution to the pollution problem you have chosen.

TYPE OF POLLUTION:.....

My educational solution is:.....

.....

My political solution is:.....

.....

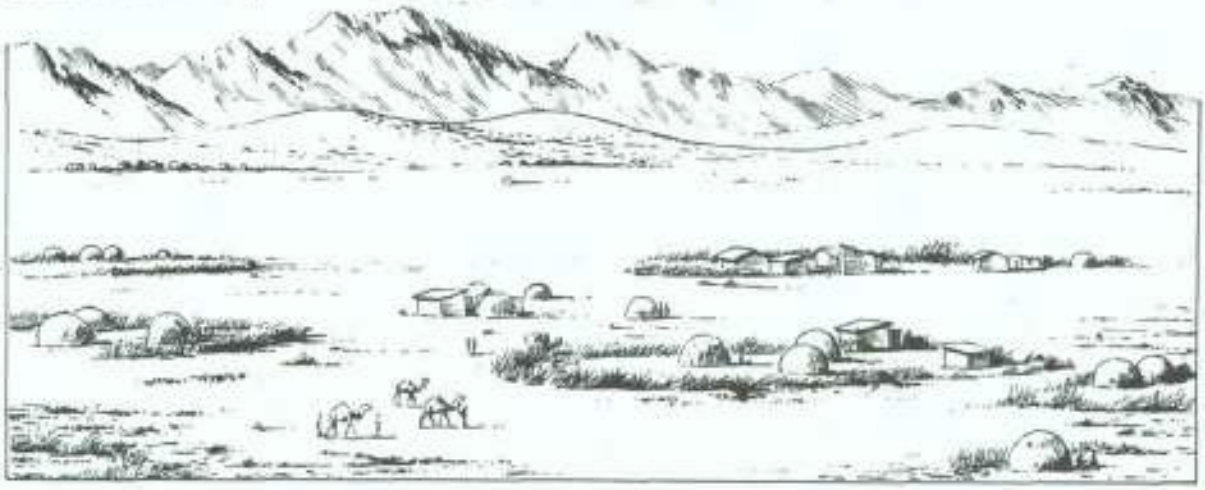
My technological solution is:.....

.....

RESOURCE 7

THE INTEGRATED PROJECT IN ARID LANDS

Source: Desertification, in WWF (1989) *Only One Earth*, WWF Multi-media Education Pack, WWF UK, Godalming.



Desertification around Kori

EXTRACT 1

In the mid-1970s, Rendille land was invaded by teams of scientists of various colours, nationalities and disciplines. These anthropologists, rangeland experts, soil scientists, hydrologists and meteorologists were known collectively as 'IPAL' — the Integrated Project in Arid Lands. IPAL had been set up by UNESCO, UNEP and the Kenyan government in order to find ways of improving the lot of the nomadic tribes of northern Kenya. (The IPAL project also covers the lands to the north, south and west of the Rendille, which belong to Gabra, Samburu and Turkana nomadic pastoralist tribes. It encompasses more than 8500 square miles, an area twice the size of the island of Jamaica.)

There are many reasons for the failure of aid projects which are designed to 'develop' traditional cultures; some have even done more harm than good. All too often they break down because they are dreamed up in places such as London and Washington and then applied in the developing world by foreign teams with little idea of the life-styles of the people to be helped. Development consultants, who are based in European and North American capitals but work in the Third World on two- to three-year contracts, may have big budgets, but they have little time. They can rarely take years to study the peculiarities of the local people, their ambitions, their skills, their own ways of coping. Often there is only enough time to begin the building of a dam or an irrigation system, or the introduction of a new crop. But 'improvements' which may have worked well enough in the drylands of California, Australia or Israel do not necessarily succeed elsewhere.

The IPAL experts tried to avoid this classic error by taking their time. Rather than immediately recommending new techniques and building new things, they spent time studying the region closely. They decided early on that the most important variable in the region was not the rainfall, water tables or the soil, but the people.

Source: 'Only One Earth', L. Timberlake, BBC/Earthscan

QUESTIONS AND ACTIVITIES

1. Read Extract 1. Lloyd Timberlake says that many aid projects fail. What reasons does he give for their failure?
2. How has IPAL tried to avoid these failures?

EXTRACT 2

Dr Walter Lusigi, a Kenyan range ecologist and former project manager of IPAL, places humans firmly at the centre of the desertification problem, maintaining: 'Man can justifiably be regarded as the dominant element in the grazing land ecosystems by virtue of his overwhelming impact upon them, exerted largely through his domestic animals . . .

EXTRACT 3

'This area we are standing in now is a man-made desert,' said Dr Lusigi, looking out over the landscape around Korr. 'What has happened here is the result of introducing permanent water in a place where there should not have been permanent water at all. The people have been in here with their livestock and have overgrazed the area completely. They have cut down the trees. After the trees are gone, then the rain comes and strips the ground and the wind takes up the soil. That is the phenomenon we call desertification.'

Source: 'Only One Earth': L. Timberlake. BBC Earthscan

3. Read Extracts 2 and 3. What does Dr Lusigi mean by his statement in Extract 2?
4. In Extract 3 Dr Lusigi has identified the reasons for desertification occurring around Korr. What are they?

EXTRACT 4

IPAL not only 'integrated' its research, but integrated its prescriptions for saving the environment — many of which appear at first glance to have nothing whatsoever to do with the environment. One of the first things that the scientists realised was that they should avoid sentimentalising nomadism. Many Rendille were clearly anxious to settle. Trying to induce them all to return to the nomadic ways of life would have been a 'romantic notion', said Dr Lusigi. The goal is not so much to encourage all of the people to move again as to get their animals moving, giving over-used grasslands time to recover. But this does mean mobilising a reasonable number of herders in order to accompany the herds, and such mobility requires at least three things.

First, it must be physically possible. There must be enough wells scattered around the plains to enable the herds to move across those plains without dying of thirst. Thus, many small wells are being dug. If the herds are mostly camels, rather than sheep and goats, they can cover more ground with less water. Camels are also less destructive to the soil and the vegetation. Scientists have therefore been encouraging the Rendille to return to their traditional camel-based herding.

Second, nomadism must be made less of a hardship than it is at present. UNESCO workers are trying to establish 'mobile shops' on the backs of the camels of *morans*, so that consumer goods such as sugar, tea, flour, tobacco and radio batteries can be taken out to the *fora* camps. These same camels bring into Korr the milk and firewood necessary to the family members who have been left behind, especially the children.

Third, the Rendille must believe that by herding they can realise their ambitions, whether these be the purchase of a pair of jeans of the longer-term hope of sending all their children to school. The Rendille will not revert to a nomadic way of life just because a UN agency tells them to; it is essential that they see it as a better option than depending on food handouts in town, or chasing the few jobs available in Nairobi. For this reason UNESCO has gone into the livestock herding business itself. It has also organised the Pastoralists' Association, one of which D'igir Turoga heads.

In the past the Rendille did not need to sell livestock because they had little use for money. Now, however, there are the shops in towns such as Korr, as well as the new mobile shops. School fees come to the equivalent of £50 ($75) per year, with the added expense of uniforms and materials — this is a country in which the average annual income equals only a few hundred pounds. When the herders first began selling their stock, they were cheated by 'middle men'; traders who took advantage of the herders' commercial *naiveté* by buying cheaply in the drylands and then selling at higher prices in the animal markets of Nairobi. UNESCO has organised a monthly auction where it buys animals for sale in Nairobi. Each month a few members of the Pastoralists' Association take the livestock lorry to the capital, so that the herders can see how the Nairobi markets work. In doing this they are adding the skills of modern commercial dealing to their traditional herding and drylands survival skills.

Matters are helped by the fact that the main buying agent in Nairobi is a Rendille, also a member of the Association. But the Association is more than a club for the sale of livestock. In the old days, when each clan was gathered in a *manyatta*, there was a council of elders which met every morning to decide on the herding strategies of the day and of the days to come. As the *manyattas* were abandoned for the towns, this forum for exchanging information and passing on traditional knowledge vanished. The Association revives the practice, allowing for new learning in the process.

'It brings the pastoralists together,' said D'igir. 'And also it's good because there are new ideas which were not known before, especially where these animals are sold and where they are taken.'

Source: 'Only One Earth': L. Timberlake. BBC Earthscan

5. Read Extract 4. Why did Lusigi think it a 'romantic notion' to try to induce the Rendille to return to the nomadic ways of life?
6. In the film, Dr Lusigi said that the animals — but not necessarily the people — of the Rendille must be encouraged to go on the move again to prevent the spread of further desertification around Korr. Name three factors which IPAL has identified which may encourage the Rendille to get their livestock on the move again.
7. What does the Pastoralist Association do?

EXTRACT 5

The 'Resource Management Plan' which IPAL initiated and which the Kenyan government and its Arid Lands Research Station have taken over is ambitious. It calls for the digging of 400 wells, one every ten square miles in the Rendille area alone. The cost of this would be about £800,000 ($1.2 million).

A start has been made, and in the process the contrasting methods of the traditional and the modern experts have been highlighted. D'igir Turoga travelled into the bush with a Californian hydrologist who took with him an expensive electronic seismograph. By using his eyes and studying the lie of the land and the vegetation, Turoga gave the verdict either, 'Here lies water' or 'No water here'. The hydrologist plugged his seismograph into the soil while his assistant banged a metal plate some yards away. As the reverberations through the ground were registered, he was able to take readings from the wave patterns on the device's oscilloscope. In every case the expert agreed with D'igir's eyeball assessment.

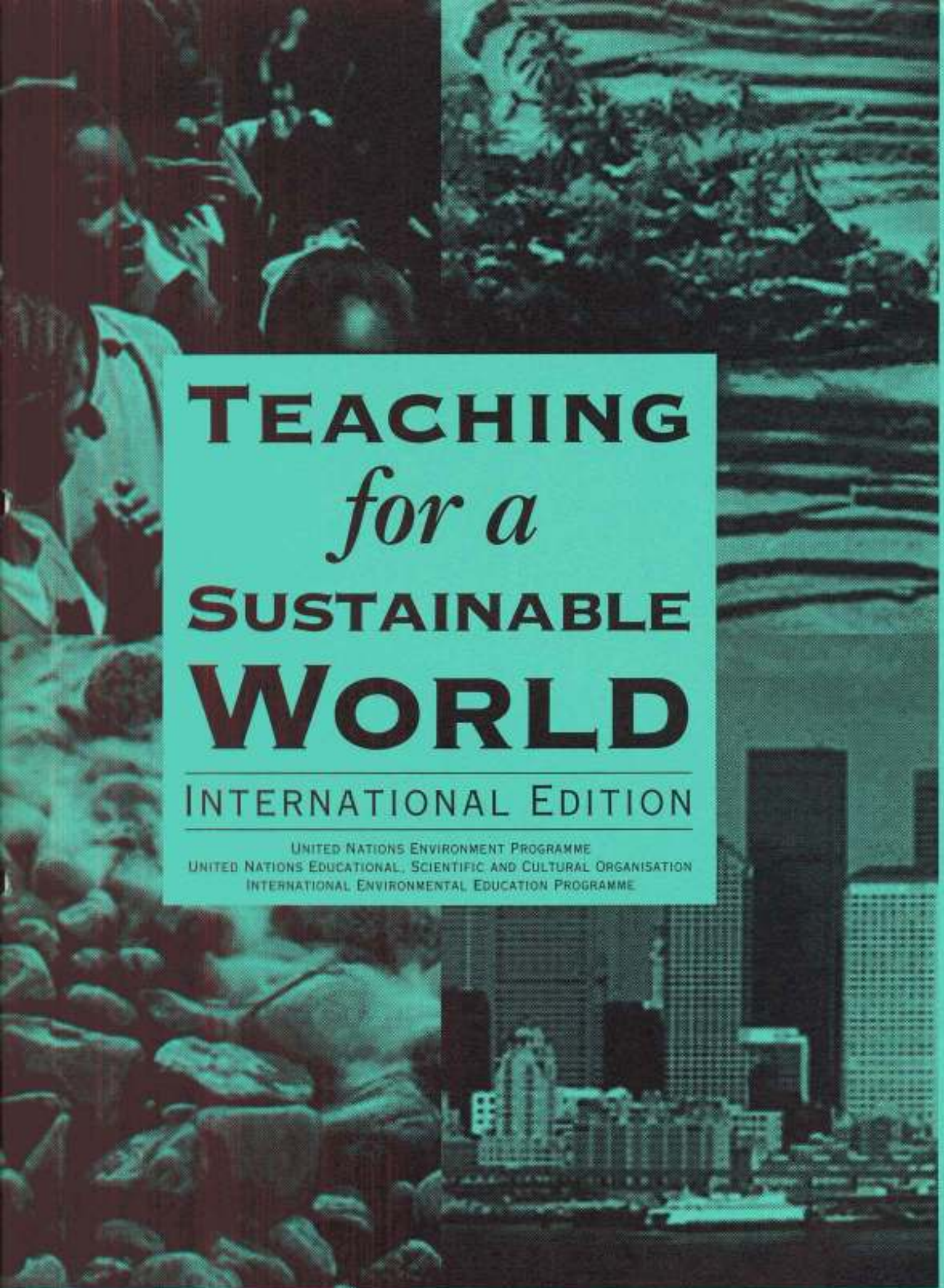
If the land is to be used efficiently, the Kenyan government will also have to take firmer measures against the banditry and inter-tribal raiding which still plague the region and put valuable grasslands out of use. Livestock raiding was traditionally a rite of passage for the young warriors. There were relatively few casualties in the days of spears, clubs and shields; wounds attracted the attention of young women and were something to boast about by the camp fire. With the advent of automatic weapons, a skirmish today can leave many dead. The situation is complicated by the fact that raiders may come from Ethiopia to the north and from Somalia to the east.

There are plans to bring in bamboo from around Mount Kenya to the south so that fencing can be provided without the herders having to cut down trees to make corrals. Hilltops to the east and west of the Rendille flatlands must be reforested to protect watersheds and to keep rains from becoming destructive floods. Co-operative livestock management systems dividing up rangelands among herders must be set up and enforced by local range-management officers, who must be hired and trained. Dr Lusigi wants to see savings and loan banks in the district, and training provided so that the Rendille are able to learn how to manage money as well as camels.

These measures may seem to involve a great deal of trouble and expense just to keep a relatively small number of people gainfully employed in a hostile landscape. But the Kenyan government has strong motives for wishing to carry out the work. Kenya consumes and exports more meat than most African nations, and well over half of that meat comes from the drylands. Ultimately, the success of IPAL and similar efforts made by dryland pastoralists may be crucial to human welfare and financial security throughout the African continent.

Source: 'Only One Earth': L. Timberlake: BBC Earthscan

8. Read Extract 5. What does IPAL's Resource Management Plan suggest is the most effective way to halt desertification and improve the Rendille's way of life. To what extent do IPAL's and the Kenyan government's plans follow the eight guidelines mentioned in Activity Sheet 6? Do you think the IPAL/Kenyan government initiative in Rendille territory is likely to succeed?



MODULE 5

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID
AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC.

TEACHING *for* ECOLOGICALLY SUSTAINABLE DEVELOPMENT

HILARY MACLEOD
QUEENSLAND DEPARTMENT OF EDUCATION
AUSTRALIA

INTRODUCTION

This workshop analyses the concept of Ecologically Sustainable Development (ESD). Since the inception of the concept of ESD, it has found its way into the language and onto the agendas of many government and non-government organisations around the world. Much has been written in academic terms about ESD and the need to integrate ecological and economic principles into personal and public decision-making. However, there is also a need to consider what the concept means, in practice, for the education sector. Even the seminal document on the subject - *Our Common Future* (the Brundtland Report) - omits to make a clear statement on how the education system could address ESD. This workshop puts forward the case for an 'education for' approach that promotes the values and actions that make ESD feasible.

OUTCOMES

The workshop provides participants with opportunities to:

- develop an understanding of the concept of Ecologically Sustainable Development (ESD) by examining the value base behind a range of interpretations of the concept and clarifying their own views;
- develop an understanding of the objectives of education for ESD;
- practice a number of learning and teaching strategies that promote education for ESD, in particular values clarification, large and small group discussion and evaluation activities; and
- plan teaching units which incorporate the aims, knowledge, processes, skills and values inherent in education for ESD.

WORKSHOP OUTLINE

1. Overview

An introduction to the structure of the workshop.

2. Where Do You Stand?

An 'icebreaker' involving a 'physical' values continuum. The activity also divides participants into groups for a later activity.

3. The Great ESD Debate!

Background information about the concept of ESD.

4. What is ESD?

A values exploration and clarification exercise in small groups. Alternative meanings of sustainable development and the values underlying them are analysed.

5. Why Teach for ESD?

A mini-lecture which gives the rationale for ESD followed by small group work to plan teaching units using 'circus' strategy.

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Proverb

OHT 2: Overview

OHT 3: Principles of ESD

OHT 4: Education for Ecologically Sustainable Development

RESOURCES

Resource 1: Sustainable Development Statement Cards

Resource 2: What is Ecologically Sustainable Development?

Resource 3: Values Continua

Resource 4: Aspects of Sustainability

Resource 5: Aspects of Development

Resource 6: Sources of ESD Definitions

Resource 7: Unit Planner

Resource 8: Key ESD Issues

READINGS

Reading 1: Nature of Ecologically Sustainable Development

Reading 2: Why Education for Ecologically Sustainable Development?

B) To Obtain

Activity 2: 2 sheets of chart paper.

Activity 4: The sustainable development definitions on Resource 1 need to be photocopied and cut up (and perhaps mounted on card) so that there is a set for each group. Coloured pens for each group.

ADDITIONAL READING

Beder, S. (1993) *The Nature of Sustainable Development*, Scribe Australia, Sydney.

Fien, J. (ed.) (1993) *Environmental Education: A Pathway to Sustainability*, Deakin University Press, Geelong.

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Orr, D. (1992) Ecological Literacy: Education and the Transition to a Postmodern World, State University of New York Press, Albany.

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WWF (1987) *Only One Earth*, WWF (UK), Godalming.

ACKNOWLEDGEMENT

This workshop utilises activities from the teaching resource, *Teaching for Ecologically Sustainable Development: Guidelines for Years 11 - 12 Geography*, which has been published by the Department of Education, Queensland, Australia. In particular, OHT 4 and Resources 1-6 come from this source.

1. Overview

- A suggested introductory activity would be to discuss the importance of education for ESD as illustrated by the words of the Chinese poet Kuan Tzu in 500 BC (OHT 1).
- Outline the sequence of the workshop session (OHT 2).

2. Where Do You Stand?

This activity is used to highlight the values-centred nature of the concept of ESD.

- Position two sheets of chart paper at opposite ends of the workshop space. Each sheet should have marked on it a statement which illustrates an opposing view of a particular environmental or development issue, e.g.:
  - population control (yes/no)
  - alternative energy sources v coal/firewood
  - selected logging of rainforest areas v absolute preservation

  It is preferable to choose an issue on which the participants are likely to take a personal stand and which will illustrate diverse values within the group.
- Ask participants to position themselves along a continuum between the two sheets of paper according to their view on the issue.
- Ask the participants to turn to their neighbour and discuss the reasons why they have positioned themselves in such a way.
- Ask participants at opposite ends of the continuum to justify their choices.
- Debrief by asking participants to suggest how this strategy could be used in a classroom.

3. The Great ESD Debate!

Present an introduction to the concept of 'ecologically sustainable development' and the issues which accompany it.

Information for a mini-lecture may be drawn from Reading 1.

OHT 3 may also be used at this point.

4. What is ESD?

In 1987 the World Commission on Environment and Development (1987, p. 43) described the concept of sustainable development as:

> ... *development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*

Since then this broad definition has been taken up by a number of groups and interpreted in a variety of ways. There are now well over 160 definitions of the term 'sustainable development' and, though some are variations on a theme, many reflect basic differences in values. It is important that participants recognise that there is no consensus on what ESD means in practice. Therefore, this activity is designed to expose them to a selection of statements made about sustainable development and to assist them to look closely at the values underlying those statements.

Preparation

- Copy and cut up Resource 1 to prepare a set of Sustainable Development Statement Cards (and paste on to card if necessary) in order to have a complete set of cards for each group.
- You may wish to use all the Statement Cards or you may chose to discard some. If time is short you may wish to leave out Statement Cards 1, 5, 7, 8, 12 and 15.

  NOTE: Statement Cards 3, 6, 10 and 13 are especially essential to be included.
- Participants should be in groups of 3-4 persons for this activity.

Instructions

- Distribute Resources 2-5 and the sets of Sustainable Development Statement Cards to each group and explain the procedure for the activity as outlined on Resource 2.
- Discuss the explanations of sustainability and development which are outlined on Resources 4 and 5.
- Before allowing groups to start on the activities on Resource 2, work through one of the Statement Cards and, as a whole group, discuss marking its position on the values continua of Resource 3.

Debriefing

- Discuss with the group the range of values and the principles involved in the concept of ESD.
- Using Resource 6, check the participants' answers to Question 2(d) on Resource 2.
- Have participants read their definitions of ESD to the group and discuss the differences between them.

5. Why Teach for ESD?

A. Mini lecture

Information for the mini-lecture may be taken from Reading 2.

OHT 4 may be used at this point.

B. Unit Planning Exercise

- Divide participants into small groups with interests in the same teaching level, subject or audience and give each group a copy of Resource 7 that has been photopcopied and enlarged to A3 size.
- Each group selects a key ESD issue either from Resource 8 (or of their own choice) upon which to develop the outline for a teaching unit.
- Groups use the information gathered from the workshop to brainstorm ideas and complete the summary unit plan on Resource 7.

  NOTE: Facilitators may wish/need to provide appropriate syllabuses, curriculum guides or other resources to assist.
- Each group then displays its summary unit plan on the wall. These unit plans are then shared using the 'circus' strategy. One person from each group remains with the plan to clarify and answer questions, while the rest of the group circulate to view (and even add to) the ideas displayed on the other groups' plans.



OHT 1

PROVERB

If you are thinking a year ahead, sow seed

If you are thinking ten years ahead, plant a tree

If you are thinking a hundred years ahead, educate the people

Chinese poet Kuan Tzu 500 BC

OHT 2

OVERVIEW

1. Overview

2. Where do you stand?

3. The great ESD debate!

4. What is ESD?

5. Why teach for ESD?

OHT's

OHT 3

PRINCIPLES OF ESD

Source: Hare, W. L. (ed.) (1990) *Ecological Sustainable Development: A Submission*, ACF, Greenpeace (Australia), Wilderness Society and WWF, Melbourne.

- Qualitative Development
- Pricing Environmental Values and Natural Resources
- Adopting a Global Perspective
- Ensuring Efficiency
- Ensuring a Resilient Economy
- Ensuring an Externally Balanced Economy
- Community Participation
- Ensuring Intergenerational Equity
- Conserving Biodiversity and Ecological Integrity
- Preserving Constant Natural Capital and 'Sustainable Income'
- Supporting an Anticipatory and Precautionary Policy Approach
- Ensuring Social Equity
- Limiting Natural Resource Use

OHT's

OHT 4

Education for Ecologically Sustainable Development

Source: Macleod, H. (1992) *Teaching for Ecologically Sustainable Development*, Queensland Department of Education, Brisbane, p. 2.

Aims to:

- clarify the concept of ecologically sustainable development (ESD)
- develop understandings of ecological and economic principles
- promote critical analysis of the relationship between ecological and economic principles
- include positive models and successful case studies of ESD in action
- promote values and personal actions which are integral to the achievement of ESD
- encourage active participation in decision making regarding ESD

RESOURCE 1

SUSTAINABLE DEVELOPMENT STATEMENT CARDS

Source: Macleod, H. (1992) *Teaching for Ecologically Sustainable Development*, Queensland Department of Education, Brisbane, pp. 29-30.

1 Sustainable development is development that is consistent with the natural functioning of the biosphere.

2 Sustainable development is development that takes into account the impact of projects on the environment and natural resources.

3 The simplest definition of a sustainable activity is that it can be continued for the foreseeable future. And this has at least three dimensions: it means not unreasonably depleting natural resources, not producing waste products that significantly alter natural systems, and not undermining social stability.

4 Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

5 The core of the idea of sustainability is the concept that current decisions should not damage the prospects for maintaining or improving future living standards.

6 A primary goal of sustainable development is to achieve a reasonable (however defined) level of fairly distributed economic well-being that can be maintained for many human generations.

7 Sustainable development - development that is likely to achieve lasting satisfaction of human needs and improvement of the quality of human life.

8 The sustainable society is one that lives within the limits of its environment. That society ... is not a 'no-growth' society. It is, rather, a society that recognises the limits of growth and looks for alternative ways of growing.

9 The government supports the concept of sustainable economic development. Stable prosperity can be achieved throughout the world provided the environment is nurtured and safeguarded.

10 A strategy of development aims to increase the fulfilment of human wants, however defined. For such a strategy to be sustainable, it must not threaten the health or the productive capacity of future generations.

11 The main principle of sustainable development is the creation of a society that is designed as if we planned to stay - that is, it meets human needs without destroying the environmental, social or economic base upon which we depend.

12 For development to be sustainable it must take account of social and ecological factors, as well as economic ones; of the living and non-living resource base; and of the long and short-term advantages and disadvantages of alternative actions.

13 Sustainable development is about marrying the twin objectives of producing more ... and enhancing our environment at the same time.

14 Sustainable development is using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased.

15 The common use of the word 'sustainable' suggests an ability to maintain some activity in the face of stress. We thus define agricultural sustainability as the ability to maintain productivity, whether of a field or farm or nation, in the face of stress or shock.

16 Defining ecological sustainability is by no means an easy task. Optimal resource and environmental management is only one aspect of sustainability - social equity and cultural issues are also fundamental.

RESOURCE 2

WHAT IS ECOLOGICALLY SUSTAINABLE DEVELOPMENT?

Source: Macleod, H. (1992) *Teaching for Ecologically Sustainable Development*, Queensland Department of Education, Brisbane, p. 27.

INSTRUCTIONS

1. Place the Statement Cards face down on the table.

2. Take it in turns to select a card and read it to the rest of the group. Refer to Resources 4 and 5. Discuss and answer the following questions for each statement:
   (a) Which of the aspects of sustainability does the author favour?
   (b) Which of the aspects of development does the author favour?
   (c) Are there any contradictory statements made by this author?
   (d) Who do you think made this statement? (Was it a politician, a member of an industrial group, a scientist, an economist or an environmentalist?)

3. Now look again at statement numbers 3, 6, 10 and 13. Mark on the values continua (Resource 3) where you think each of these statements should be by putting the number of the statement at the appropriate spot.

4. Join each of the numbers with a different coloured pen. Is there any common pattern? What can you say about the different values that are behind these statements?

5. What do you think 'ecologically sustainable development' means? Try to write your own statement, including in it the main elements of ecologically sustainable development, and be prepared to discuss the importance of these elements.

RESOURCE 3

VALUES CONTINUA

Source: Macleod, H. (1992) *Teaching for Ecologically Sustainable Development*, Queensland Department of Education, Brisbane, p. 27.

Supports the preservation of the natural environment



Encourages the exploitation of the natural environment for human needs

Supports zero economic growth



Supports high economic growth

Supports fairness between all species for the present generation (intragenerational equity)



Does not support intragenerational equity

Supports fairness for future generations (intergenerational equity)



Does not support intergenerational equity

RESOURCE 4

ASPECTS OF SUSTAINABILITY

Source: Macleod, H. (1992) *Teaching for Ecologically Sustainable Development*, Queensland Department of Education, Brisbane, p. 28.

Although a complete definition of sustainability would include all of the following aspects, some definitions may only include one or two.

1. Economic Sustainability

Economic sustainability means that development is economically efficient and that the benefits of such development are distributed between generations. Economic efficiency means that processes and projects undertaken must give the greatest output per unit of input.

2. Social Sustainability

Social sustainability requires that development not cause social conflict. In practice this means that development should increase people's control over their lives - that all social groups should have the opportunity to participate in decision making.

3. Cultural Sustainability

Cultural sustainability requires that any development should take into account the values of the people affected by it. In addition, the range of cultural groups should be maintained and encouraged, and the value of their heritage and traditions recognised.

4. Ecological Sustainability

Ecological sustainability means that development should take into account the maintenance of ecological processes, biological diversity and biological resources. To achieve this, our society needs to recognise that the survival and well-being of other species are also important.

RESOURCE 5

ASPECTS OF DEVELOPMENT

Source: Macleod, H. (1992) *Teaching for Ecologically Sustainable Development*, Queensland Department of Education, Brisbane, p. 28.

The word 'development' literally means a process of change. But what is it we are trying to change? Here are some ideas:

- Development is helping others to help themselves.
- Development is the process by which all humanity moves to live with dignity and a just share in the world's resources.
- Development is progress towards a higher standard of living for every person in a region or nation.
- Development is a form of imperialism whereby the rich nations exploit the poor.
- Development is the attempt to ensure that, as nations change and increase their production per head, there is a better distribution of wealth, so that every person has his/her basic needs met and as many as possible of his/her wants satisfied.
- Development is the growing capacity of a society to incorporate change.
- Development is sharing the world's wealth more equitably. It is sharing our world.
- Development is economic growth measured in terms of the improvement in national product.
- Development is the satisfaction of mass needs by packaged solutions.

RESOURCE 6

SOURCES OF ESD DEFINITIONS

Source: Macleod, H. (1992) *Teaching for Ecologically Sustainable Development*, Queensland Department of Education, Brisbane, pp. 31-32.

The statements on sustainable development (Resource 1) have been adapted from the following sources:

Statement 1: Prof. Ralph Slatyer (former Science Adviser to the Australian Prime Minister), quoted in L. Zarsky (1990) *Sustainable Development: Challenges for Australia*, AGPS, Canberra.

Statement 2: Australian International Development Assistance Bureau (1989) *Development Dictionary: A Glossary of Aid and Development Terms*, AGPS, Canberra. [AIDAB is an official government aid agency that is part of the Department of Foreign Affairs and Trade. It is responsible for administering Australia's overseas aid program.]

Statement 3: Ian Lowe (1990) Sustainable Development: How Do We Get There?, *Australian Society*, June, No. 5. [Associate Professor Ian Lowe is the Director of the Science Policy Research Centre attached to the Faculty of Science and Technology at Griffith University, Australia, and is a former Director of the Commission for the Future.]

Statement 4: World Commission on Environment and Development (1987) *Our Common Future*, Oxford University Press, Oxford. [The WCED was an independent international body consisting of twenty-three commissioners, including prominent political figures and leaders in environment and development.]

Statement 5: Robert Repetto (1986) *World Enough and Time*, Yale University Press, New Haven. [A North American economist]

Statement 6: Robert Goodland and G. Ledoc (1987) Neoclassical economics and principles of sustainable development, *Ecological Modelling*, 38. [At the time of writing, Goodland and Ledoc worked for Environmental and Scientific Affairs, Projects Policy Department, World Bank, Washington, DC.]

Statement 7: Robert Allen (1980) *How to Save the World*, Kogan Page, London, p. 23.

Statement 8: James Coomer (1979) The Nature of the Quest for a Sustainable Society, in J. Coomer, ed., *Quest for a Sustainable Society*, Pergamon Press, Oxford.

Statement 9: British Prime Minister Margaret Thatcher, Speech to the Royal Society, UK, 27th September 1988.

Statement 10: The Commission for the Future (1990) A Sustainable Future for Australia, in *Our Common Future*, Australian Edition, edited by Stephen Dovers, p. 25. [The Commission for the Future was established by the Australian Commonwealth Government to encourage Australians to become involved in the economic and social opportunities made possible by scientific and technological development. Their function is to explain the social impacts of science and technology and to foster the development of an innovative, productive culture.]

Statement 11: Canadian University Services Overseas, *Here to Stay: A Resource Kit on Environmentally Sustainable Development* (publication date unknown). [CUSO is an international development agency based in Canada. The organisation works to promote understanding and action on international development issues and to foster relationships of support between Canadian and overseas groups working for social change.]

Statement 12: John Woodley (1990) Summary of the Australian Democrats Policy Statement, in *Queensland Action for World Development Newsletter*, No.3, May. [John Woodley is a Uniting Church Minister and Senator for the Australian Democrats in the Australian Parliament.]

Statement 13: Barry Rowe (1990) Australian (Commonwealth Government) Minister for Agriculture and Rural Affairs, AAP News Bulletin, 6th September.

Statement 14: Australian Commonwealth Government (1990) *Ecologically Sustainable Development: A Commonwealth Discussion Paper*, June.

Statement 15: Gordon Conway and Edward Barbier (1988) After the Green Revolution: Sustainable and Equitable Agricultural Development, *Futures*, 20 (6), p. 653. [At the time of writing Gordon Conway was the Director and Edward Barbier the Associate Director of the Sustainable Agricultural Program at the International Institute for Environment and Development attached to the London Environmental Economics Centre, UK.]

Statement 16: Australian Conservation Foundation, Greenpeace (Australia), The Wilderness Society and World Wide Fund for Nature (1990) *Ecologically Sustainable Development*, ACF, Fitzroy.

RESOURCE 7

UNIT PLANNER

AUDIENCE: _____

KEY ISSUE: _____

Focus Questions	Strategies	Process/Skill Objectives	Affective Objectives	Resources Needed	Evaluation Assessment

RESOURCE 8

KEY ESD ISSUES

Source: Adapted from WCED (1987) *Our Common Future*, Oxford University Press, New York.

POPULATION AND HUMAN RESOURCES

- World population will pass the 8 billion mark by the year 2025.
- The most rapid population growth occurs in the Third World countries, e.g. Africa, Asia and Latin America.
- The degree of consumption of resources per capita differs markedly between the Third World and industrialised nations.
- Health status, education levels and social conditions also differ greatly.

FOOD SECURITY

- There is widespread famine despite the dramatic increase in the world production of cereal (x 2.5), meat (x 3) and milk (x 2) between the years 1950 and 1985.
- The increase in food production has been due to the use of new seed varieties, chemical fertilisers and pesticides, and increased irrigation, all of which can be beyond the reach of the small farmers.
- New methods also have detrimental effects on the environment. New seed varieties are not generally resistant to pests and require large amounts of water and chemicals to sustain them. Overuse of chemical pesticides and fertilisers has led to widespread pollution of water and biological magnification of these chemicals in food chains. Irrigation has caused salinisation and alkalisation of soils.
- Farm subsidies in industrialised nations result in overuse of land and chemicals and affect the terms of trade in Third World countries.
- Third World debt leads to the use of land to produce cash crops for export, which pushes subsistence farmers onto marginal lands and thus causes widespread soil degradation.

THE URBAN CHALLENGE

- By the year 2000, about 50 per cent of the world's population will live in urban communities.
- Between 1950 and 1985 the cities of industrialised countries have doubled in population, while in the Third World countries the population has quadrupled.
- Population pressure has resulted in inadequate urban infrastructure and services.
- The most prominent problems are unemployment, poor housing conditions and environmentally and socially related health concerns.

ENERGY

- It is estimated that by the year 2025 global energy consumption will have increased by 40 per cent over 1980 figures.
- The most used energy sources for commercial energy production and consumption are as follows:
  - fossil fuels (oil 40 per cent, coal 30.3 per cent and gas 19.7 per cent);
  - hydropower (30 per cent) and nuclear power (15 per cent), which are becoming increasingly important in the generation of electricity;
  - biomass fuels (wood, crop residues and dung), which the majority of the Third World rely on for their energy supplies.
- Renewable energy amounts to only 21 per cent of the total energy consumed worldwide. Solar, wind, geothermal and alternative energy sources such as ethanol have found only limited, small-scale use.
- The dependence on fossil fuels, which are finite, has resulted in four major problems:
  - large-scale climatic change resulting from the emission of CO_2 (greenhouse effect);
  - urban air pollution;
  - acidification as a result of the release of SO_x and NO_x during combustion;
  - depletion of the resource and resultant international conflict.
- Nuclear power has its own problems:
  - health risks to workers involved in its production and disposal of the wastes;
  - health risks to the community;
  - risk of catastrophic accident;
  - need for very strict security.

INDUSTRY

- Between 1950 and 1987 the production of manufactured goods increased sevenfold and the production of minerals threefold.
- Trade in manufactured goods has increased relative to trade in primary products, particularly in the Third World.
- The pattern of industrialisation in the Third World mirrors that of the industrialised nations and presents similar environmental problems.
- The ability of Third World countries to deal with such problems as the disposal of hazardous wastes and industrial pollution has not been as great as in the industrialised nations, where significant progress has been made in the last decade.

SPECIES AND ECOSYSTEMS

- The estimated total number of species on earth ranges from 5 to 30 million.
- The most biodiverse ecosystems are the wet tropical forests.
- A conservative estimate indicates that the forests of Latin America could contain 1 million species of flora and fauna.
- The depletion of the gene pool has serious implications for the global economy, since a substantial proportion of the production of medicines and drugs depends on species found in the tropical forests.
- The WCED estimates that the value of these pharmaceuticals in the USA alone is $14 billion per year.

MANAGING THE COMMONS

- Environmental problems concerning the oceans include, in particular, overfishing and marine pollution.
- By the year 2000 the sustainable catch from world fisheries could be exceeded by as much as 30 million tonnes (FAO figures).
- Sources of marine pollution include municipal sewage, industrial and agricultural run-off, oil spills and the dumping of toxic and other hazardous wastes.
- Management of the oceans is regulated by the Convention on the 1972 Prevention of Marine Pollution by Dumping of Wastes and other Matter (London Dumping Convention) and the 1982 UN Law of the Sea Convention.
- Management of the Antarctic continent is governed by the Antarctic Treaty System.
- The dominant issue facing nations that are signatories to the Antarctic Treaty System has been the extent to which there should be mining of the continent's minerals and the exclusion of some Third World nations from much of the decision making.
- Management of outer space by the 1967 Outer Space Treaty has not been endorsed by all nations.
- The increasing amount of space 'junk' is a pollution problem that has been largely overlooked. It indicates the need for international agreements on the issue.

CONFLICT AND ENVIRONMENTAL DEGRADATION

- Environmental degradation caused by such factors as overexploitation of the land, drought and global climatic changes leads to deepening poverty and famine, which in turn contribute to social unrest and conflict.
- The threat of nuclear war presents us with the possibility of unprecedented global ecosystem destruction.
- Military expenditure estimated at $US900 billion in 1985, diverts funds from the urgent environmental problems facing Third World nations.

READING 1

NATURE OF ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Source: Macleod, H. (1992) *Teaching for Ecologically Sustainable Development*, Queensland Department of Education, Brisbane, p. 1-3 (coloured insert).

The term 'sustainable development' was originally used by the World Commission on Environment and Development (WCED) in a report published in 1987 entitled *Our Common Future*. The aim of this report, also known as the Brundtland Report after the Chair of the Commission and former Prime Minister of Norway, Gro Harlem Brundtland, was to examine the environmental and developmental problems of the world and to suggest practical ways to alleviate them. In particular, the WCED outlined three general objectives:

- *to re-examine the critical environmental and development issues and to formulate realistic proposals for dealing with them;*
- *to propose new forms of international co-operation on these issues that will influence policies and events in the direction of needed changes; and*
- *to raise the levels of understanding and commitment to action of individuals, voluntary organisations, businesses, institutes, and governments.*

(WCED, 1987, pp. 3-4)

The report was the culmination of three years of public hearings and over five hundred written submissions, and the analysis of this material by commissioners from twenty-one countries. The final report was submitted to the United Nations General Assembly at its 42nd Session in 1987.

Key Issues

In order to examine the global situation the WCED identified eight key issues:

- population and human resources
- food security
- the urban challenge
- energy
- industry
- species and ecosystems
- managing the commons
- conflict and environmental degradation

Analysis of the Evidence

One of the most important outcomes of the report was that it changed the thinking of many of the commissioners involved. The evidence collected indicated quite clearly that the 'either environment or development' debate was inappropriate and that environmental and economic issues are interconnected. The WCED's resulting analysis concluded that:

> *Environment and development are not separate challenges. Development cannot subsist on a deteriorating environmental resource base; the environment cannot be protected when growth leaves out of account the costs of environmental destruction. These problems cannot be treated separately by fragmented institutions and policies. They are linked in a complex system of cause and effect.*
>
> (WCED, 1987, p. 37)

The WCED therefore argued for an approach to development that would take into account the relationship between environmental and developmental issues. The WCED referred to 'sustainable development', which it defined as:

> development that meets the needs of the present without compromising the ability of future generations to meet their own needs
>
> (WCED 1987, p. 43)

However, the WCED maintained that sustainable development was not likely to be achieved unless two factors contributing to the present inequitable and therefore unsustainable structures of the world were addressed.

The first of these—poverty—was recognised to be both a major cause and an effect of global environmental problems. The cycle of poverty forces the poor countries to grow unsuitable cash crops for export and to overexploit marginal lands, which in turn leads to increased degradation of the environment and deepening poverty.

The second of these factors—the global population growth rate—is more complex. Certainly the exponential growth rate of the world's population cannot be sustained by the finite resources of the world. It would be easy to conclude that the burgeoning populations of the Third World bear the major responsibility for environmental degradation and that checking their population growth would solve the most serious environmental problems. However, this is to ignore the fact of unequal distribution of resources. It has long been recognised that the statement 'hunger is caused by overpopulation' is a myth. At present there is enough food for everyone, but the rich industrialised nations consume more than their fair share. Feeding the rich nations has meant that in many countries the poor have lost the land from which they fed themselves and at the same time the means to buy food elsewhere.

The WCED's answer to these problems is renewed and vigorous economic growth. It is this statement that has been the source of most controversy. The present economic system is deemed by many to be the origin of the unequal and unsustainable world order in the first place. The WCED does, however, go on to qualify its call for economic growth by emphasising the need for qualitative rather than quantitative growth, and growth that is shared equally by all. Nonetheless, the WCED's challenge to produce a redefinition of growth has not been made clear. It has resulted in much confusion about what ecologically sustainable development means in practice.

Conclusions

The WCED not only outlined specific recommendations to address the key issues but also set out the means necessary to achieve sustainable development policies:

- revive growth
- change the quality of growth
- meet essential needs for jobs, food, energy, water, and sanitation
- conserve and enhance the resource base
- ensure a sustainable level of population
- reorient technology and manage risks
- integrate environment and economics in decision making
- reform international economic relations
- strengthen international co-operation

In practical terms, these objectives could be achieved by developing:

- *a political system that secures effective citizen participation in decision making;*
- *an economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis;*
- *a social system that provides for solutions for the tensions arising from disharmonious development;*
- *a production system that respects the obligation to preserve the ecological base for development;*
- *a technological system that can search continuously for new solutions;*
- *an international system that fosters sustainable patterns of trade and finance;*
- *an administrative system that is flexible and has the capacity for self-correction.*

(WCED, 1987, p. 65)

Implications for Public Policy

For policy makers, the clear message of the Brundtland Report is that the problems we face are largely a result of the fragmented nature of the government system(s). In these governments, those who are responsible for environmental concerns are separated from those with responsibility for developmental concerns. However, the WCED's report has demonstrated that environmental problems are inextricably linked with poor development, and development cannot continue indefinitely with depleted environmental resources. Evidently the goal of ecologically sustainable development requires that ecological principles be included with economic principles on the policy agenda of all countries.

In 1991, the Australian Government released the discussion paper *Ecologically Sustainable Development*. The paper outlined five general principles as the key elements of ecologically sustainable development:

- *integrating economic and environmental goals in policies and activities;*
- *ensuring that environmental assets are appropriately valued;*
- *providing for equity within and between generations;*
- *dealing cautiously with risk and irreversibility; and*
- *recognising the global dimension.*

(AGPS, 1990, p. 2)

The document's 199 clauses include detail as to how these principles might be applied to general policy and in the main industry sectors (agriculture, forestry, fishing, mining, energy, manufacturing, transport and tourism).

The Government's discussion paper has been criticised to some extent by some prominent environmental groups in a joint submission also called *Ecologically Sustainable Development*. The groups comprised the Australian Conservation Foundation, Greenpeace, the Wilderness Society and World Wide Fund for Nature. The submission argued that the principles are inadequate because they:

- do not address equity issues;
- reinforce the traditional model of economic growth as a matter of course;
- overlook the contribution of consumption and lifestyle patterns to the problem of waste and pollution;
- fail to set goals and targets;
- omit population as a policy issue.

Despite these criticisms, the environmental groups, with the exception of the Wilderness Society* agreed to be involved in the nine working parties set up after distribution of a discussion paper to address key industrial issues. These working parties included representatives from government, science, the community, industry and trade unions. The groups' reports were publicly released on 2 December 1991. Since then Government groups have been working towards a framework strategy to be considered in May 1992.

* After the introduction of the Resource Security Legislation by the Federal Government in March 1991, Greenpeace (Australia) withdrew from the process.

READING 2

WHY EDUCATION FOR ECOLOGICALLY SUSTAINABLE DEVELOPMENT?

Source: Adapted from Macleod, H. (1992) *Teaching for Ecologically Sustainable Development*, Queensland Department of Education, Brisbane, pp. 1-2.

In recent years the general community has become increasingly aware of the adverse environmental and social effects of our contemporary lifestyles. The 'greenhouse effect' and 'ozone hole' are high-profile issues that receive a great deal of attention. However, there are other pressing environmental and social problems, such as pollution (in all its forms), soil degradation, resource depletion, the loss of biological diversity through species destruction, unemployment, poverty and famine. These problems all indicate that our prevailing lifestyles are unsustainable. They combine to present us with a crisis that is global in its dimensions and without precedent in history. The philosophy of ecologically sustainable development (ESD) is a response to this crisis. It is a philosophy that seeks to integrate the ecological and economic principles that govern our lives.

However, there appears to be little consensus about what ESD means in practice. Until now the discussion has tended to revolve around the 'growth versus no growth' debate. There are those who argue for zero or negative economic growth on the grounds that high economic growth has created the environmental problems. On the other hand, there are those who would contend that zero or negative economic growth would create extreme hardship for most of the world's poor. Such a debate is misleading, because what we really need is to work towards a qualitative change in the nature of development - development that is measured by qualitative rather than quantitative indicators. This redefinition of 'development' should form the basis of ESD.

The acceptance of the concept of ESD on the political agenda (at local, national and global levels) reflects current trends toward integrated, long-term planning and decision making. Such trends can also be identified in education. However, the concept has particular importance for students and teachers of Senior Geography because it springs from a consideration of the same process that is fundamental to the study of geography: the interaction between people and the environment. Moreover, because most of today's decision makers will be dead before the full impact of the global environmental crisis is felt, young voters and future decision makers should be encouraged to think and act in holistic and far-sighted ways.

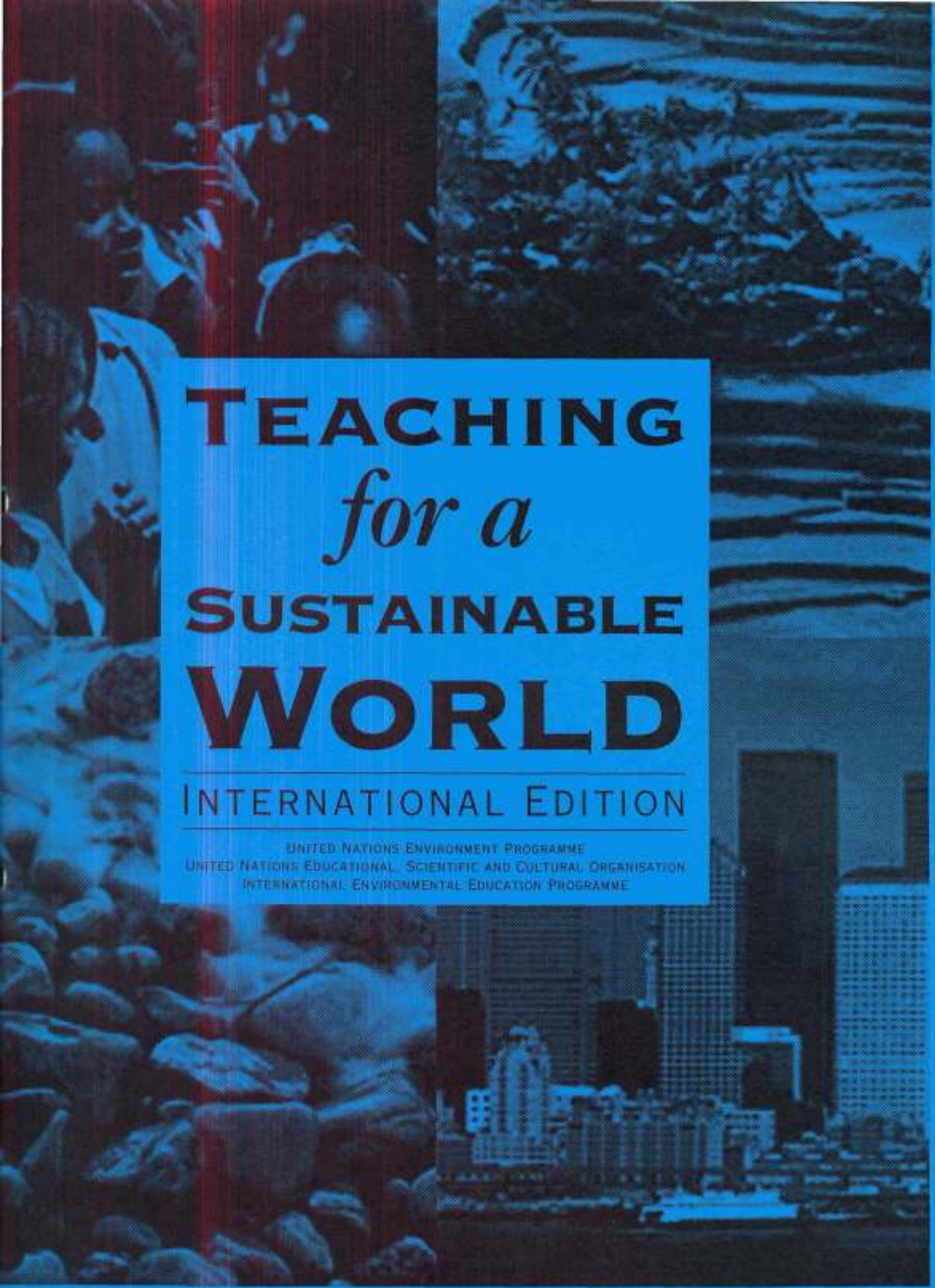
In the foreward of the report by the World Commission on Environment and Development (WCED), Gro Harlem Brundtland states that:

> ... *our message is directed towards young people. whose well-being is the ultimate goal of all environment and development policies. In particular, the Commission is addressing the young. The world's teachers will have a crucial role to play in bringing this report to them* (WCED, 1987).

Although the Chair of the WCED mentioned the importance of the role of educators and youth in the report, there were no clear statements or recommendations made about the direction that education for ecologically sustainable development (ESD) should take. In fact a notable omission from the list of recommendations on pages 2 and 3 of *Our Common Future* is a statement regarding the education system.

While it is essential that the present generation of policy makers be educated about Ecologically Sustainable Development and its implications, the achievement of long-term success is clearly in the hands of future generations. Thus education for ESD should strive to:

- clarify the concept of ESD;
- develop understanding of ecological and economic principles;
- promote critical analysis of the relationship between ecological and economic principles;
- include positive models and successful case studies of ecologically sustainable development in action;
- promote values and personal actions that are integral to the achievement of ecologically sustainable development;
- encourage active participation in decision making regarding ecologically sustainable development .



MODULE 6

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP

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INTRODUCING ALTERNATIVE FUTURES

DAVID HICKS
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UNITED KINGDOM

INTRODUCTION

This workshop introduces participants to the notion of alternative futures and encourages them to explore their own expectations and aspirations for the future, both in relation to their own country and the wider world.

OUTCOMES

During this workshop, participants will:

- recognise the importance of a futures perspective for all work relating to environmental and development issues;
- understand key concepts in futures studies and futures education;
- reflect on their own views on preferable and probable futures; and
- apply the ideas from the workshop to a particular curricular topic.

WORKSHOP OUTLINE

1. Introduction: Some Trends for the Future

An activity asking participants to agree on a diamond ranking of the significance of a selection of trends for the future.

2. Mini-briefing

The concepts of preferable and probable futures is explored through either a mini-lecture or group discussion.

3. Global Timelines

Participants draw their own probable and preferable timelines in the context of their own country.

4. Futures Thinking

In small groups, participants apply a futures perspective to a particular issue or curriculum area.

MATERIALS REQUIRED

A) PROVIDED

RESOURCES

Resource 1: Some Trends for the Future

Resource 2: Educational Rationale for Futures Education

Resource 3: Futures Thinking: Some Examples

READING

Reading 1: On Alternative Futures

B) TO OBTAIN

Activity 3: A sheet of A3 paper for each participant, coloured pens.

ADDITIONAL READING

Beare, H. and Slaughter, R (1993) *Education for the Twenty-First Century*, Routledge, London.

Gough, N. (1990) Futures in Australian Education: Tacit, Token and Taken for Granted, *Futures*, 22 (3), 298-310.

Hicks, D. (1994) *Educating for the Future: A Practical Classroom Guide*, World Wide Fund for Nature UK, Godalming.

Marien, M. and Jennings, L. (1987) *What I Have Learned: Thinking About the Future Then and Now*, Greenwood Press, New York.

Tough, A. (1992) *Critical Questions About the Future*, University Press of America, New York.

Wagar, W. (1992) *The Next Three Futures: Paradigms of Things to Come*, Adamantine Press, London.

Activities

1. Trends for the Future

For this activity each pair of participants will need a set of the nine statements on 'Some Trends for the Future' (Resource 1) cut up into slips. At the end of the activity each participant can be given a copy of the complete sheet.

- Participants sit in pairs with a space between them on which to work. Each pair is given a set of 'Some Trends for the Future' (Resource 1) cut up into a series of nine slips. The task is for each pair to agree on a diamond ranking of these slips in response to the question: 'Which of these trends will have the most significant impact on the future?'

1

2 2

3 3 3

4 4

5

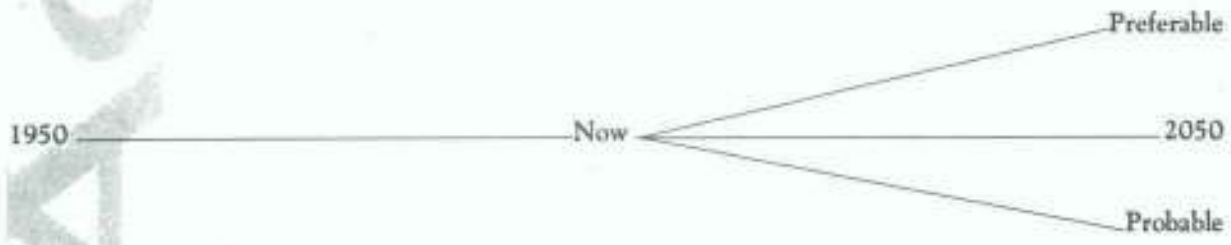
- Since partners have to *agree* on their ranking they will need to discuss both their response to the trends and their criteria for defining 'significant'. No further guidance need be given since one purpose of this introductory activity is to encourage participants to formulate their own responses to the material.
- After 20 minutes one person from each pair reports briefly to the whole group on their 'top 3' trends. Why did they select these three? What is so important about them? What evidence do *they* have for these trends? What has been left out? What sense of the future does the group seem to have?

2. Mini-lecture or Group Discussion

- Reading 1, 'On Alternative Futures', should be used as the basis for a mini-lecture or, alternatively, the document can be used for individual reading and subsequent group discussion.
- Resources 2 and 3 are summaries of key points from Reading 1 and may be used to support the presentation as handouts or made into OHP masters.

3. Global Timelines

- Participants work in pairs to draw their own probable and preferable timelines under the heading 'My Country in the World, the World in My Country'. The basic format for this is as below.



- The heading is intended to remind participants that their country has both many links *out* to the rest of the world and also that the rest of the world is present *within* their country in a multiplicity of ways. On the left-hand side of the timeline important past events and current trends should be indicated in as graphic and eye-catching a way as possible.
- Participants then mark on their probable timeline, also in an eye-catching way, the events and trends that they *expect* to occur within the next hundred years.
- Finally participants mark on the preferable timeline the events and trends that they would *like* to come about within the next hundred years.
- Completed timelines can be displayed and the whole group given time to study these.
- Depending on the size of the group all or some pairs then make brief reports on their probable and preferable futures.
- Whole group discussion should then focus on questions such as:
  - What are the main similarities/differences on probable futures?
  - What are the main similarities/differences on preferable futures?
  - What are the main differences between the two?
  - How may the probable futures affect participants' personal lives?
  - What action is needed to bring their preferable futures about?
  - What organisations are already working towards such futures?
  - How might such timelines vary depending on age, gender, class and ethnicity?

4. Curriculum Application

- Participants work in small groups of 5-6. Each participant has a copy of 'Futures Thinking: Some Examples' (Resource 3) which highlights some of the main elements of a futures perspective. The group then selects examples of futures thinking to apply to either a particular issue or a specific curriculum area. Allow 30 minutes.
- Debriefing: How does each example of futures thinking enhance the study of that issue or the particular curriculum area in question? A spokesperson should report back briefly from each group. Whole group discussion should then focus on the question: 'Why is a futures emphasis essential in the curriculum?'

RESOURCE 1

SOME TRENDS FOR THE FUTURE

Cultural Diversity

Whilst we are now all part of one global system, it is ethnic, cultural and historical differences amongst peoples that will increasingly influence national and global affairs in the future.

The Pacific Rim

The centre of world trade is now shifting from the Atlantic to the Pacific Rim. Asian countries bordering the Pacific will become more important as they undergo the fastest period of economic expansion in history.

Gender Equity

Women are increasingly taking command of their own lives, both at work and at home. As gender relations become more equal, social priorities will change, and this will have a significant impact on the way in which society is organised and run.

Biotechnology

The new scientific frontier of genetic engineering is about to transform our lives whether we like it or not. This includes both the creation of new plant and animal breeds as well as alteration of human genes.

Religious Revival

There are now clear signs of a worldwide religious and spiritual revival, ranging from the growth of fundamentalist and evangelical groups to the spread of New Age beliefs and a renaissance of more ancient traditions.

Environmental Concern

Due to issues such as global warming and ozone depletion there is now an upsurge of popular interest in environmental issues. Increasingly, people are aware of the need to preserve and nurture the planet itself.

Wealth and Poverty

The nature of the world economic system is such that the gap between the countries of the rich North and the poor South will continue to increase. This growing division will create serious future problems.

Changing World Views

In the West there is now a major value shift away from a predominantly scientific and mechanistic view of the world to a more holistic and ecological one. This can now be seen internationally in many fields of enquiry.

Trend X

One of the most important trends in the last decade of the twentieth century which will have a major impact on the future is ..... (write own).

RESOURCE 2

EDUCATIONAL RATIONALE FOR FUTURES EDUCATION

1. Pupil Motivation

Pupil expectation about the future can affect behaviour in the present, e.g. that something is, or is not, worth working for. Alternatively, clear images of desired personal goals can help stimulate motivation and achievement.

2. Anticipating Change

Anticipatory skills and flexibility of mind are important in times of rapid change. Such skills enable pupils to deal more effectively with uncertainty and to be pro-active rather than reactive to change.

3. Critical Thinking

In weighing up information, considering trends and imagining alternatives, pupils will need to exercise reflective and critical thinking. This is often triggered by realising the contradictions between how the world is now and how one would like it to be.

4. Clarifying Values

All images of the future are underpinned by differing value assumptions about human nature and society. In a democratic society pupils need to be able to begin to identify such value judgements before they can make appropriate choices between alternatives themselves.

5. Decision Making

Becoming more aware of trends and events which are likely to influence one's own future and investigating the possible consequences of one's actions on others in the future, leads to much more thoughtful decision making in the present.

6. Creative Imagination

One faculty that can contribute to, and which is particularly enhanced by, designing alternative futures is that of the creative imagination. Both this *and* critical thinking are needed to envision a range of preferable futures from the personal to the global.

7. A Better World

It is important in a democratic society that young people develop their sense of vision particularly in relation to more just and sustainable futures. Such forward thinking is an essential ingredient in both the preserving and improving of society.

8. Responsible Citizenship

Critical participation in democratic life leads to the development of political skills and thus more active and responsible citizenship. Future generations are then more likely to benefit, rather than lose, from decisions made today.

9. Stewardship

Understanding the short and long-term consequences of current local and global trends, as well as the action needed to change these, can lead to a sense of stewardship both for the planet now and for those yet to come.

RESOURCE 3

FUTURES THINKING: SOME EXAMPLES

1. State of the Planet

In the last decade of the 20th century the state of the planet continues to give serious cause for concern. Issues to do with the environment, development, conflict and human rights, have a major impact both locally and globally. Participants need to know about the causes of global problems, their likely impact on the future and the action needed to help resolve them.

2. Managing Change

In periods of rapid social and technological change the past cannot provide an accurate guide to the future. Anticipation and adaptability, foresight and flexibility, innovation and intuition, become increasingly essential tools for survival. Participants need to develop such skills in order to become more adaptable and pro-active towards change.

3. Hopes and Fears

Hopes and fears for the future often influence decision making in the present. Fears can lead to the avoidance of problems rather than their resolution. Clarifying hopes for the future often enhances motivation in the present and thus positive action for change. Participants need to explore their own hopes and fears for the future and learn to work creatively with them.

4. Views of the Future

People's views of the future may vary greatly depending, for example, on status, age, gender and culture, as well as their attitudes to change, to the environment and technology. Participants need to be aware of how views of the future thus differ and the ways in which this affects people's priorities in the present.

5. Alternative Futures

At any point in time a range of different futures is possible. It is useful to distinguish between probable futures, those which seem *likely* to come about, and preferable futures, those we feel *should* come about. Participants need to explore and debate a range of probable and preferable futures, from the personal to the global.

6. Past/Present/Future

Interdependence exists across both space and time. Past, present and future are inextricably connected. We are directly linked back in time by the oldest members of the community and forward nearly a century by those born today. Participants need to explore these links and to gain a sense of both continuity and change as well as of responsibility for the future.

7. Visions for the Future

The transition from one century to another, and particularly from one millennium to another, is often seen as a turning point for society. What needs to be left behind and what taken forward? Visions of a better future can help to motivate active and responsible citizenship in the present. Participants therefore need to develop their own skills of envisioning and their use of creative imagination.

8. Future Generations

Economists, philosophers and international lawyers increasingly recognise the rights of future generations. It has been suggested that no generation should inherit less human and natural wealth than the one that preceded it. Participants need to discuss the rights of future generations and what the responsibility to uphold them may involve.

9. Sustainable Futures

Current consumerist lifestyles on this planet are increasingly seen as unsustainable often causing more damage than benefit. Sustainable development, on the other hand, prioritizes concern for the environment, the poorest members of the community, and the needs of future generations. Participants need to understand how this applies to their everyday lives both personally and professionally.

READING 1

ON ALTERNATIVE FUTURES

Education for the Future

The 21st century will be very different from today and yet study of the future is a neglected issue in education. Young people are concerned about global issues but also often feel unprepared for what the future might bring. If all education is for the future then the future needs to become a more explicit element at all levels of education. Most of what goes on in education draws on the past, is enacted in the present, but is intended for some future use.

In a world where change seems increasingly rapid, whether at local, national or global scales, it is important to ask questions about the future. Where are we going and where do we want to go? What are my hopes and dreams for the future, for myself, for others and for the planet? What can we do together *now* in order to help create a more just and sustainable future?

Reasons for looking more explicitly at different futures in the classroom include:

1. Pupil Motivation

Pupil expectation about the future can affect behaviour in the present, e.g. that something is, or is not, worth working for. Alternatively, clear images of desirable personal goals can help stimulate motivation and achievement.

2. Anticipating Change

Anticipatory skills and flexibility of mind are important in times of rapid change. Such skills enable pupils to deal more effectively with uncertainty and to be pro-active rather the reactive to change.

3. Critical Thinking

In weighing up information, considering trends and imagining alternatives, pupils will need to exercise reflective and critical thinking. This is often triggered by realising the contradictions between how the world is now and how one would like it to be.

4. Clarifying Values

All images of the future are underpinned by differing value assumptions about human nature and society. In a democratic society pupils need to be able to begin to identify such value judgements before they can make appropriate choices between alternatives themselves.

5. Decision Making

Becoming more aware of trends and events which are likely to influence one's own future and investigating the possible consequences of one's actions on others in the future, leads to much more thoughtful decision making in the present.

6. Creative Imagination

One faculty that can contribute to, and which is particularly enhanced by, designing alternative futures is that of the creative imagination. Both this *and* critical thinking are needed to envision a range of preferable futures from the personal to the global.

7. A Better World

It is important in a democratic society that young people develop their sense of vision particularly in relation to more just and sustainable futures. Such forward thinking is an essential ingredient in both the preserving and improving of society.

8. Responsible Citizenship

Critical participation in democratic life leads to the development of political skills and thus more active and responsible citizenship. Future generations are then more likely to benefit, rather than lose, from decisions made today.

9. Stewardship

Understanding the short and long-term consequences of current local and global trends, as well as the action needed to change these, can lead to a sense of stewardship both for the planet now and for those yet to come.

Experiencing the Future

The future is an essential ingredient of daily life and integral to all human experience. Virtually every activity we engage in presumes some future continuation in time. Whenever we have aims, ambitions, make plans or take precautions, speculate or make commitments, we are concerned with the future. Without some sense of the future we could not even begin to articulate our hopes and dreams, let alone realise them. The future is an essential

and constant ingredient in all human endeavour.

Within society, different groups will have quite different aspirations for the future. This may depend, for example, on political allegiance, income, gender, age, or ethnic group. Many of the futures espoused will be incompatible with others, thus groups compete for allegiance to their view of how things should be. At the same time it is those groups with the most power and influence in society which make their aspirations most visible, for example, governments, business and the media. Any concern for justice and equality, however, requires that the voices of the marginalised also be heard. For those living in the rich North concern for the future is often to do with quality of life. For those living in the poor South concern for the future is often to do with economic welfare.

Whilst many decisions about the future may be outside the individual's direct control, the images and expectations that people have of the future often affect what they think is worth doing in the present. Fear of the future can be disempowering but it can also lead to engagement in social and political action to bring a different sort of future about. The resurgence of the peace movement in the early 1980s, and the environmental movement more recently, are cases in point. The images that we have of the future matter because they help determine what we feel is worth working for.

Approaching the end of a century seems to concentrate the mind on the future, even more so the end of a millennium. The dates are, of course, Christian and in that sense the millennium is merely a Western concept. However, it is still a powerful one, combining as it does the end of a decade, the end of a century, the end of a millennium and of two thousand years of Christianity.

Such a date, 2001 not 2000 to be exact, becomes a symbolic threshold and a metaphor for the future itself. A last decade turns into a first, one century into another, the second millennium into the third. The timescale on which this turning point occurs is lent even more weight by its three-fold nature. Once an event comes to be perceived as some sort of potential turning point it becomes invested with even greater power. People feel presented with an opportunity to search for new beginnings and meanings, to close one door and open another. Is it to be the Apocalypse or a Golden Age?

The millennium presents us with an opportunity to re-examine ourselves, our values and institutions, and how we feel about the world we have inherited. It is likely that a spate of popular books will appear during the 1990s making all sorts of predication about the future. They will be read by our pupils and will need to be studied with a critical eye.

Colonised Futures

Critical to any understanding of alternative futures is the realisation that while, on the one hand, the future is uncertain, on the other many powerful interest groups are busy 'colonising' it. There is a parallel with the more familiar process of colonisation of territory. Thus the powerful groups in a society have already colonised the future, i.e. mapped out how the future should be to suit *their* interests. Adults do this frequently to children, white people to black people through institutionalised racism, in patriarchal society men dictate the future of women. In particular, consumer capitalism, with its constant quest for new markets and materials, colonises our minds and our futures. Business and advertising constantly create new needs that we did not know we had. Multinational corporations which control world trade, whether in oil, food or fashion, have planned the future well in advance. They will be there waiting for us, having manipulated our desires and invaded our dreams, to give us what we 'need' next.

Decisions made by similar powerful groups in the past now affect the present, whether the invention of the internal combustion engine, CFCs or nuclear weapons. In particular, politicians and scientists have made decisions on our behalf in the past with which we and future generations might now disagree. The future can thus also be colonised in the sense that various possible futures no longer exist, e.g. a future free of radioactive nuclear waste is no longer possible. Pupils need to understand this process and the way in which it undermines their own interests and those of future generations.

Views of the Future

People's views of the future can vary radically depending on their underlying assumptions and values. Consider the following five sketches of commonly held views of the future.

1. Business as Usual

This view is held by those who argue that the future will be very much like today. In other words, there will be the usual alarms and excursions, but nothing that cannot be effectively dealt with. The main problems in the future will be similar to those of today and solvable in similar

ways; in short, the world will go on much as it has done before.

2. Edge of Disaster

This view is held by those who believe that we are on the verge of one or more major catastrophes, the signs of which are already clearly evident. They range from accidental nuclear war, major famine and poverty, breakdown of law and order, to environmental pollution and global warming. Life as we know it is on the verge of breakdown and when various elements collapse it will never be the same again.

3. Authoritarian Control

This view is held by those who feel that the risk of disaster is so great that the best solution is imposition of some form of strict external authority. Only this will be able to prevent major disorder by controlling, for example, population growth or the use of increasingly scarce resources. In this way chaos and confrontation, whether national or international, can be avoided.

4. Technological Growth

This view is held by those who believe that the answer to most problems lies in the accelerated growth of science and technology. Thus, nuclear energy, computerisation, genetic engineering, lunar colonisation, are all seen as offering dramatic rewards, especially for business. (This vision of the future particularly appeals to many men and boys.)

5. Ecological Insight

This view is held by those who believe that the future must be involve a major change in direction, away from a mechanistic and fragmented view of the world to a more holistic and ecological one. It requires a major shift away from the technical and economic goals towards a more humane, ecological and person-centred vision of society.

The actual future may well involve a mix of all these elements depending in part on who you are and where you live on this planet. All images of the future, popular and academic, reflect the inquirer's normative preconceptions. Wagar thus describes three main perspectives on the future which he defines as 'technoliberal', 'radical', and 'countercultural'.

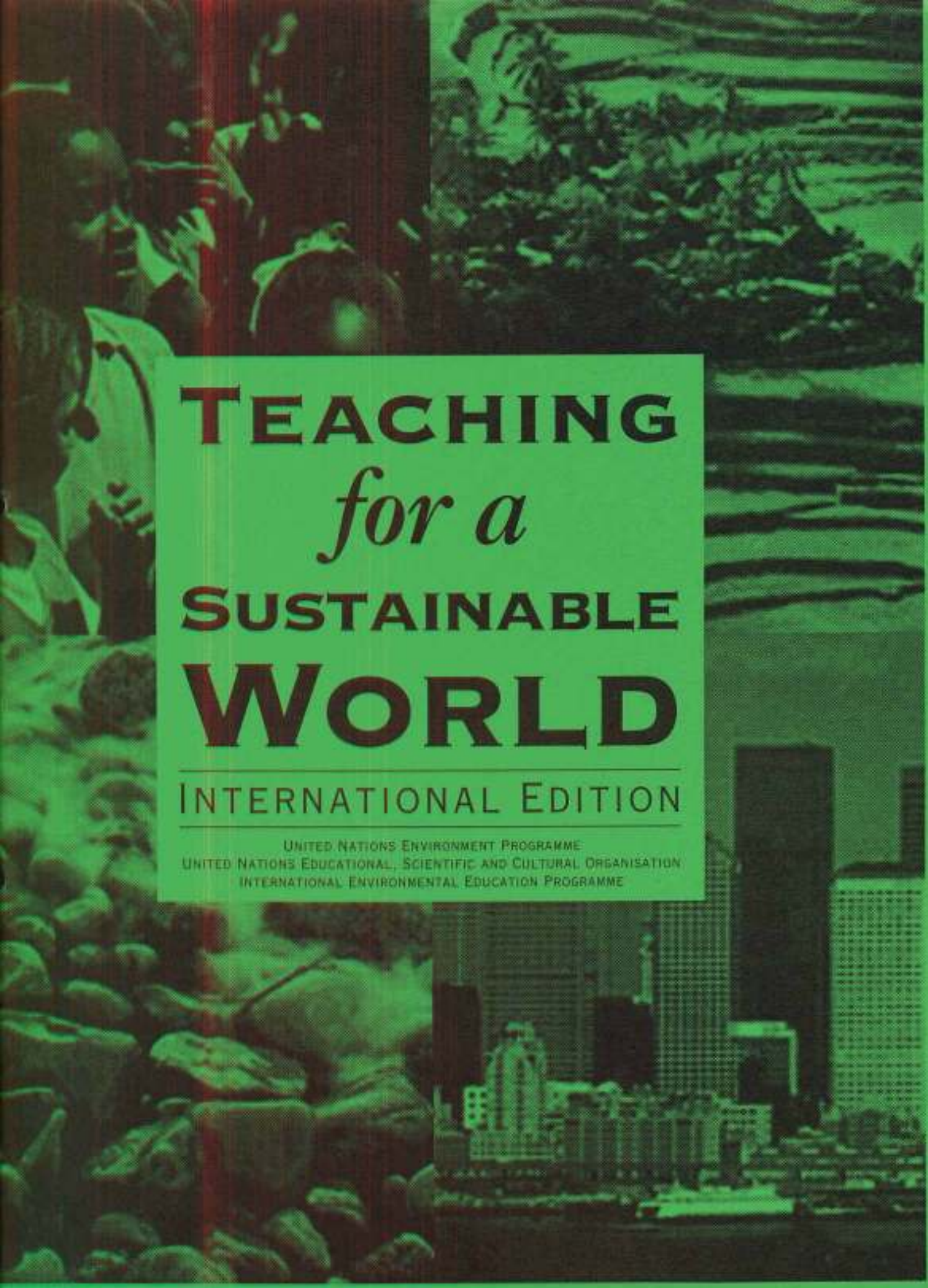
The technoliberal approach embraces conservative and neo-conservative perspectives, which emphasise the power of technology to solve future problems. This is characteristic of much of the North American literature on futures. The radical approach embraces socialist and social-democratic perspectives, and challenges the political and economic models of the technoliberals. It is more commonly associated with European futurists. The counterculturalist approach embraces a variety of 'deep green' and New Age perspectives, which directly challenge many of the central values of Western society.

Probable/Preferable Futures

One of the most useful initial frameworks for exploring alternative futures is the distinction between probable and preferable futures. Probable futures are all those which seem *likely* to come about. They are often arrived at by the extrapolation of current trends, whether in relation to population growth, car ownership, desertification or global warming. Forecasts are then made about what is expected to happen. Most of the long-term planning carried out be business and industry is of this nature. When people think about the future it is often their image of the probable future that comes to mind. Much of the current debate about global warming, for example, is about which figures for temperature increase are most likely. Depending on which forecast is taken the consequences in terms of sea-level rise and changing climate vary considerably.

Preferable futures are all those which people feel *should* come about. Such desirable futures are based on our hopes, aspirations and dreams. They embody our notions of what a better world might be like. Throughout history it has been such visions which have inspired struggles for better working conditions, the right to free speech and the right to vote. We benefit today from what others fought for in the past, inheriting crucial elements of *their* preferable futures.

Studying alternative futures and drawing on the tools and techniques that futurists use can greatly enhance any investigation of contemporary social, political, economic and technological issues. Emphasising the futures dimension in education is essential because this is the only part of history still open to change.



MODULE 7

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID

INTRODUCTION

APPRECIATING SUSTAINABLE FUTURES

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UNITED KINGDOM

INTRODUCTION

This workshop follows on from the previous Workshop Module on *Introducing Alternative Futures*. It extends the notion of preferable futures by inviting participants to explore possible 'goals for a better world' with particular reference to some key elements of sustainability.

OUTCOMES

During this workshop, participants will:

- appreciate the importance of being able to identify preferable futures, particularly those which are more just and sustainable than today;
- evaluate alternative goals for the future;
- explore the meaning of the term 'sustainability'; and
- apply the concepts in this workshop to selected topics in environmental and development education.

WORKSHOP OUTLINE

1. Introduction: Preferable Futures - The Main Features

In this activity, participants work together to develop a collective preferable future based on their personal preferable futures timelines drawn in the Workshop Module, *Introducing Alternative Futures*.

2. A Better World: 5 Goals

Participants consider 5 goals for a better world and discuss their practice both locally and globally.

3. Sustainability

Participants create a flow diagram to illustrate the interrelationships between elements of sustainable development. The group also prepares a short briefing paper on 'The Way Ahead'.

4. Application

In small groups, participants apply an element of sustainability to a chosen environmental or development issue or a specific area of the curriculum.

MATERIALS REQUIRED

A) PROVIDED

RESOURCES

Resource 1: Envisioning the Future

Resource 2: Goals for a Better World

Resource 3: Notes on Sustainability

READING

Reading 1: A Sustainable Future

B) TO OBTAIN

Activity 1: The completed futures timelines from the workshop on 'Introducing Alternative Futures' are needed. Alternatively, if that workshop has not been used with the group, the timeline activity can be used to introduce this workshop.

Activity 3: Resource 3 needs to be copied and cut up into slips so that each group has a set of statements.

A3 paper, glue, felt pens

ADDITIONAL READING

Brown, L. (1991) A Sustainable Future, *Resurgence*, No 147, 8-13.

Brown, L. *et al.* (1994) *State of the World 1994*, Earthscan Publications, London.

Brown, L., Flavin, C. and Postel, S. (1991) *Saving the Planet: How to Shape an Environmentally Sustainable Global Economy*, W.W. Norton and Co., New York.

Green Justice: The South Speaks Out, *The New Internationalist*, No 230, April 1992.

Milbrath, L. (1989) *Envisioning a Sustainable Society*, State University of New York Press, Albany.

Meadows, D., Meadows, D. and Randers, J. (1992) *Beyond the Limits: Global Collapse or Sustainable Future*, Earthscan Publications, London.

1. Introduction

- Participants look again at the preferable timelines drawn in pairs for the workshop 'Introducing Alternative Futures'. The timeline activity may be used to introduce this workshop if that workshop has not been completed.
- Small groups are formed by three pairs coming together. They take it in turns to share the following:
  - What is the most *important* feature of your preferable timeline?
  - What key areas of concern does it cover, e.g. the environment, work, health?
- Each group then works to create a composite picture of their preferred future. This can be in drawn or written form.
- Distribute Resource 1 on 'Envisioning the Future' to the groups who discuss: 'Which images of the future does each group feel might develop the "cultural resonance" needed to act as new guiding images for society?'
- Each group summarises the main features of their collective preferable future to the whole group. They highlight any elements which they feel may act as 'new guiding images' for society.

2. Five Goals

- Distribute copies of Resource 2 on 'Goals for a Better World'. The group takes each goal in turn and considers what it would like in practice, locally and globally, by discussing the following questions. Alternatively each group could look at *one* goal each.
  - *Why* is this a critical goal for a better world?
  - What might it *look like* in practice?
  - What is *already* being done to achieve such goals and by whom?
  - What should educators be doing about this goal?
- Groups report back by displaying their answers as a check-list or flow chart.
- Follow-up questions could be:
  - What might we want to do to help achieve such goals?
  - How might these goals be perceived differently depending on gender, race, age or class?

3. Sustainability

- Tell participants that sustainable development has been most succinctly defined as 'development which meets the needs of the present without jeopardising the needs of future generations.'
- Participants work in pairs with a clear space between them. They need a set of the statements from Resource 3 'Notes on Sustainability' cut up into slips.
- Participants read and lay out the statements to create their own annotated flow diagram (on a sheet of A3 paper) to show how each of these elements are interrelated. The slips are glued down when agreement is reached. Lines are drawn to show linkages.
- Around each statement, participants write:
  - examples we know about; and
  - things we want to research.

- The finished flowcharts are displayed and discussed.
- Distribute a complete copy of Resource 3 to each person. This will be used as a model in the next part of this activity.
- Distribute the follow-up reading, Lester Brown's 'A Sustainable Future.' (Reading 1). From this, each group prepares a short briefing paper on 'The Way Ahead.' The paper should be written in the same style as Resource 3.
- Discuss ways in which 'The Way Ahead' can be used to develop an experiential learning activity.

4. APPLICATION

- Participants work in small groups. Each group selects one element of sustainability to apply either to a chosen environmental or development issue or a specific area of the curriculum. They discuss 'What does the notion of sustainability add to the study of that issue or curriculum area?'
- A spokesperson should report back briefly from each group.
- The session concludes with a whole group discussion on 'Why an understanding of sustainability is essential for the future.'

RESOURCE 1

ENVISIONING THE FUTURE

The images and expectations that we have of the future affect what we think is worth doing in the present. Fear of the future can be disempowering but it can also lead to engagement in social and political action to bring a different sort of world about. The resurgence of the peace movement in the early 1980s and, more recently, the environmental movement are cases in point. The images we have of the future matter because they help determine our priorities in the present.

Images of the future play a critical role in the creation of change. They are continuously being promoted by big business, advertising, politicians, the media and in science fiction. They exert a powerful influence over what people think is, or is not, worth doing in the present. We can most easily work towards the future we prefer if we have clear images of where we want to go and how we might get there. Sharing the process of envisioning these futures with others enhances their creative power, both at the individual and societal levels. Elise Boulding writes:

> *At any moment, there are hundreds of images of possible futures being generated within each society, and thousands for the planet as a whole. In any cultural epoch, only certain images of the future out of that much wider pool develop enough cultural resonance to affect the course of events. There is a selective empowerment of certain images, which 'explode' later, like time bombs, into the realised future.*
>
> *Building a Global Civic Culture*,
> Teachers College Press, New York, 1988.

A crisis of direction in society, national or global, may stimulate the emergence of new guiding images. In this period of rapid change and social upheaval we should be searching for new guiding images - it may well be that the concept of sustainability provides just such an image.

RESOURCE 2

GOALS FOR A BETTER WORLD

The following list contains five goals for a better world*. Take each goal in turn, and answer the following questions on each one:

- *Why* is this a critical goal for a better world?
- What might it *look like* in practice?
- What is *already* being done to achieve such goals and by whom?
- What should educators be doing about this goal?

1. Economic Welfare

Everyone should have access to the basic necessities of life such as food, clothes, shelter, health care and education. There should be both a minimum level of welfare, below which no one should drop, but also a maximum level beyond which no one should go, due to the finite nature of many of the earth's resources.

2. Freedom from Violence

No one should be subjected to direct personal violence, e.g. through assault, robbery or war, and neither should they suffer from indirect violence. Unjust social, political and economic systems can equally cause suffering in the form of poverty, hunger and other deprivation.

3. Social Justice

What one 'has' should not depend on who one 'is' in society. Thus the practices and procedures for allocating resources should not discriminate, directly or indirectly, on the basis of gender, race, class, culture or group.

4. Ecological Diversity

This requires full and appropriate protection of the biosphere on which all life depends. Thus the rights of non-human species must also be recognised and the need for concerned stewardship of air, water, soil, creatures and plants.

5. Participation in Decisions

Genuine participation in all aspects of one's own life offers opportunities for responsibility, personal growth and enrichment. It means being in control of one's own life choices and being free to choose. This leads to ownership of decisions and is the reverse of alienation.

* Inspired by the work of Johan Galtung

RESOURCE 3

NOTES ON SUSTAINABILITY

Energy

Continued reliance on fossil fuels such as coal and oil is likely to cause major climatic change, whilst nuclear power has increasingly proved to be a social, economic and environmental liability. A sustainable future will emphasise greatly increased energy efficiency, together with renewable energy sources such as solar, wind, water and biomass.

Transport

Unrestricted use of the car has created a major series of related problems ranging from severe traffic congestion and dangerous air pollution to urban sprawl. A sustainable future will minimise the need for people to travel, with jobs being closer to home, and emphasise the use of public transport, buses, trams and light rail, as well as cycling and walking.

Environment

Unrestrained consumption of the earth's resources is beginning to produce irreversible damage to the biosphere and a major decline in land, air and water quality. In a sustainable future people will see themselves as a part of nature rather than separate from it and environmental conservation will have as high a priority as economic growth.

Economics

Traditional models of development focus narrowly on economic growth as the indicator of 'progress'. A range of costs are thus 'discounted', e.g. damage to the environment, the effect on the poor, and the effect on future generations. In a sustainable future much more comprehensive indicators of human well-being will be used.

Cities

Uncontrolled urban growth is having a profound impact on human and planetary well-being, both in the rich and poor world. In a sustainable future, planning will be more participatory and land-use and transport policies carefully integrated. Homes, jobs, services and amenities will be mixed together and thus more easily accessible by public transport, cycle or foot.

Poverty

In the poor South three-quarters of the world's people consume 17% of the world's resources, whilst in the rich North one-quarter of the world's people consume 83% of the resources. Debt and falling export prices encourage unsustainable development. A sustainable future for all requires a major change of direction in the policies and lifestyles of the North towards greater justice and equity.

Resources

In a sustainable future waste reduction and recycling will have replaced rubbish collection and disposal. Planned obsolescence, appeals to convenience, and the throwaway society of today will be seen as an aberration. Manufacturing will thus be less energy intensive and less polluting. Many items will be re-used, recycled to form new products or burnt to extract energy.

Farming

Current intensive farming methods often lead to extensive land degradation and a massive international effort is needed to protect soil, conserve water and restore soil productivity. In a sustainable future more emphasis will be placed on organic husbandry and mixed farming with biological pest controls. More food will be grown and consumed locally and regionally.

Population

During the last decade of this century world population is expected to increase by at least 960 million people. The rate of population growth tends to fall as standards of living, health and education, especially of women, increase. In a sustainable future emphasis will be given to this and world population could stabilise at eight billion by the year 2030.

READING 1

A SUSTAINABLE FUTURE

Source: Brown, L. R. (1991) A Sustainable Future, *Resurgence*, No. 147, 8-13.

WHAT PICTURE OF THE FUTURE CAN WE USE TO GUIDE OUR ACTIONS TOWARDS A GLOBAL COMMUNITY THAT CAN ENDURE?

THROUGHOUT OUR lifetimes, expanding economic activity has shaped environmental trends, often altering the Earth's natural systems in ways not obvious at the time. Now, we are moving into a period where the environmental changes we have set in motion increasingly will be shaping economic trends.

Each year, the earth's forest cover grows smaller while the deserts grow larger. Each year, the amount of top soil on our croplands diminishes, and the stratospheric ozone layer that protects us from harmful ultraviolet radiation is depleted. Each year, the concentrations of heat-trapping gases in the atmosphere rise and the number of plant and animal species shrinks. The economic effects of the environmental degradation of the planet are already affecting world food production. All forms of environmental degradation, ranging from soil erosion to the hotter summers projected as the world warms, affect agriculture adversely.

The detrimental economic consequences of environmental degradation are no longer hypothetical. They can be seen in both Africa and Latin America where a combination of rapid population growth, environmental degradation, and rising external debt have contributed to falling living standards throughout the eighties. Both Africa and Latin America ended the eighties with lower living standards and more hunger than they had when the decade began.

After a point, environmental degradation and economic decline begin to feed on each other. If we have not reversed some of these trends by the end of the nineties, the downward spiral of environmental degradation and economic decline could spread to large areas of the world. That's the bad news. The good news is that public awareness of the extent and effects of the degradation of the planet is rising everywhere. This, combined with the ending of the Cold War, provides hope of redefining security, for recognizing that the real threats to our future come more from the environmental degradation of the planet than from military aggression.

Building an environmentally sustainable global economy, one that satisfies our needs without jeopardising the prospects of future generations, will be a massive undertaking. Unfortunately no models of sustainability exist today. For the past several decades, most developing nations have aspired to the automobile-driven economies of the industrial West. But from the localized problems of intractable air pollution to the global threat of climate change, it is now clear that these societies are far from durable; indeed they are rapidly bringing about their own demise.

Successfully structuring a sustainable society requires that we have some vision of what it would look like, how it would function. If not fossil fuels to power society, then what? If forests are no longer to be cleared to grow food, then how is a larger population to be fed? If a throwaway culture leads inevitably to pollution and resource depletion, how can we satisfy our material needs? In sum, if the present path is so obviously unsound, what picture can we use to guide our actions toward a global community that can endure?

Describing the shape of a sustainable society is a risky proposition. Ideas and technologies yet unknown will fill in many of the gaps. But just as any technology of flight, however primitive or advanced, must abide by the basic principles of aerodynamics, so must a lasting society satisfy some immutable criteria. With that understanding and from the experience garnered in recent decades, it is possible to describe an environmentally sustainable global economy, one that will yield a society quite different, indeed preferable to today's.

TIME TO GET the world on a sustainable path is rapidly running out. We believe that if humanity achieves sustainability, it will do so within the next forty years. If we have not succeeded by then, environmental deterioration and economic decline will be feeding on each other, pulling us into a downward spiral of social decay and political upheaval. At such a point, reclaiming any hope of a sustainable future may simply be impossible. Our vision therefore looks to the year 2030, a time closer to the present than the end of World War II.

Sketching the outlines of a sustainable society obviously requires some basic assumptions. First, new technologies will of course be developed. Forty years ago, for example, some renewable energy technologies now on the market did not even exist. Under the pressure of finding a means to slow global warming, researchers are likely to develop a range of new energy technologies, some of which may be difficult to imagine at the moment. In the interest of being conservative, however, the future we sketch is based only on existing technologies and foreseeable improvements in them.

Second, the world economy of 2030 will most certainly not be powered by coal, oil, and natural gas. It is now well accepted that continuing heavy reliance on fossil fuels will cause catastrophic changes in climate. The most recent scientific evidence suggests that stabilising the climate depends on eventually cutting annual global carbon emissions to some two billion tons per year, about one third the current level. Taking population growth into account, the world in 2030 will therefore have per capita carbon emissions that are one eighth the level in Western Europe today.

The choice then becomes whether to make solar or nuclear power the centrepiece of energy systems. We believe societies will reject nuclear power because of its long list of economic, social, and environmental liabilities. The nuclear industry has been in decline for over a decade. Only ninety-four plants remain under construction, down from nearly 200 a decade ago, and most will be completed in the next few years. Safety concerns and the failure to develop a safe way to store nuclear waste have turned people away from nuclear power.

It is of course possible that scientists could develop new nuclear technologies that are more economical and less accident-prone. Yet this would not solve the waste problem. Nor would it alleviate growing concern about the use of nuclear energy as a stepping stone to developing nuclear weapons. Trying to prevent this in a plutonium-based economy with thousands of operating plants would require a degree of control that is probably incompatible with democratic political systems. Societies are likely to opt instead for diverse, solar-based systems.

The third major assumption is out population size. Current UN projections have the world headed for nearly nine billion people by 2030. This figure implies a doubling or tripling of the populations of Ethiopia, India, Nigeria, and scores of other countries where human numbers are already overtaxing natural support systems. Either these societies will move quickly to encourage smaller families and bring birth rates down, or rising death rates from hunger and malnutrition will check population growth.

The humane path to sustainability by the year 2030 therefore requires a dramatic drop in birth rates. As of 1990, thirteen European countries have stable populations; by 2030, most countries are likely to be in that category. For the world as a whole, human numbers will total well below nine billion. We assume a population of at most eight billion that will either be essentially stable or declining slowly, toward a number the earth can comfortably support indefinitely.

In the end, individual values are what drive social change. Progress towards sustainability thus hinges on a collective deepening of our sense of responsibility to the earth and to future generations. Without a re-evaluation of our personal aspirations and motivations, we will never achieve an environmentally sound global community.

DURING THE SEVENTIES and eighties, policymakers assumed that changes in the world energy system would be driven by depletion of the world's fossil fuel resources: as we gradually ran out of oil, coal, and natural gas, we would be forced to develop alternatives. Such a transition would have been comfortably gradual, extending over more than a century. But now the world faces a new set of limits. Long before fossil fuels are exhausted, rising global temperatures from their use would spell an end to civilization as we know it.

The world energy system in the year 2030 is thus likely to bear little resemblance to today's. No longer dominated by fossil fuels, it will be run by solar resources daily replenished by incoming sunlight and by geothermal energy. And it will be far more energy-efficient.

In many ways, the solar age today is where the coal age was when the steam engine was invented in the eighteenth century. At that time, coal was used to heat homes and smelt iron ore, but the notion of using coal-fired steam engines to power factories or transportation systems was just emerging. Yet only a short time later the first railroad started running, and fossil fuels began to transform the world economy.

The late twentieth century, then is the dawn of the solar age. Many technologies have been developed that allow us to harness the energy of the sun effectively, but these devices are so far only in limited use. Without question, these resources are available in immense quantities: the annual influx of accessible renewable resources in the United States is estimated at 250 times the country's annual use of energy.

The mix of energy sources will likely reflect the climate and natural resources of each particular region. Northern Europe, for example, is likely to rely heavily on wind and hydropower. The economies of northern Africa and the Middle East may instead use direct sunlight. Japan and the Philippines will tap their abundant geothermal energy. And Southeast Asian economies will be powered largely by wood and agricultural wastes, along with sunshine. Some nations, Norway and Brazil for example, already obtain over half their energy from renewable.

Although some countries are likely to import renewable energy, the enormous oil-related bills that characterize modern trade relationships will dwindle. And renewable energy sources are to a large extent inflation-proof: solar, wind, and geothermal power plants require no fuel and so are not vulnerable to fuel price increases.

Due to the abundance of sunlight, direct conversion of solar energy will be the cornerstone of a sustainable world energy system. By 2030, solar panels will heat most residential water around the world. A typical urban landscape will have thousands of collectors sprouting from rooftops, much as television antennas do today.

Solar thermal power is poised to become a principal means of harnessing sunlight. It uses mirrored troughs to focus sunlight onto oil-filled tubes that convey heat to a turbine and generator that then produce electricity. An 80-megawatt solar thermal plant built in the desert east of Los Angeles in 1989 converts an extraordinary twenty-two per cent of the incoming sunlight into electricity; at a third less than the cost of power from new nuclear plants. Such plants may make the deserts of the United States, North Africa, and central Asia major exporters of electricity and hydrogen fuel.

Photovoltaic solar cells are a semi-conductor technology that converts sunlight directly into electricity. Currently, photovoltaic systems are less efficient and four times as expensive as solar thermal power is. But they are already used in remote locations, and the cost is likely to decline rapidly.

Photovoltaic can be used not only in large electricity plants but to power small water pumps and rural communications systems. In addition, all Third World villages can be electrified with this technology. Unlike communities today, these villages will not have to depend on extended power lines connected to centralized plants.

Using this technology, home owners throughout the world may become producers as well as consumers of electricity. Indeed, photovoltaic shingles have already been developed that allow roofing material itself to become a power source. As costs continue to decline, many homes will be apt to get much of their electricity from photovoltaics, and in sunny regions residents will sell any surplus to the utility company for use by others.

Wind power is an indirect form of solar energy, generated by the sun's differential heating of the earth's atmosphere. Wind energy is already close to competitive with new coal-fired power plants. Engineers are confident that they will soon have improved wind turbines that are economical not just in California's blustery mountain passes, where they are now commonplace, but in vast stretches of the US northern plains and many other areas.

The United States could be deriving ten to twenty per cent of its electricity from the wind by 2030. Wind power is likely to attract new industries into windswept regions. The wind resources of the U S Great Plains, which have long pumped water for millions of cattle, may one day be used to generate electricity for sale to Denver, Kansas City, and other major cities.

For hydropower, which now supplies nearly one fifth of the world's electricity, prospects for future growth are most promising in the Third World, where the undeveloped potential is still large. Small-scale projects are likely to be more appealing than the massive projects favoured by governments and international lending agencies in past decades. In deciding which hydropower resources to develop, environmental issues such as land flooding and siltation will play an important role.

LIVING PLANTS PROVIDE another means of capturing solar energy. Through photosynthesis, they convert sunlight into biomass that can be burned. Today, wood already provides twelve per cent of the world's energy, chiefly in the form of firewood and charcoal in developing countries. Its use will surely expand during the next forty years, though resource constraints will not permit it to replace all of the vast quantities of liquid fuels in use today.

One promising approach is to grow energy crops on marginal lands not currently used for food. Land that is too steeply sloping or not sufficiently fertile or well watered for crops might support trees that are periodically harvested. The wood could then be burned directly in a wood-fired power plant or converted to ethanol.

Geothermal energy employs the huge reservoir for heat that lies beneath the earth's surface, making it the only renewable source that does not rely on sunlight. Continuing advances will allow engineers to use previously unexploitable, lower-temperature reservoirs that are hundreds of times as abundant as those in use today. Virtually all Pacific Rim countries, as well as those along East Africa's Great Rift and Mediterranean Sea, are well endowed with geothermal energy.

In both industrial and developing nations, energy production inevitably will be much more decentralized, breaking up the huge industries that have been a dominant part of the economic scene in the late twentieth century.

GETTING TOTAL GLOBAL carbon emissions down to two billion tons a year requires vast improvements in energy efficiency. Fortunately, many of the technologies to accomplish such reductions are already at hand and cost-effective. No technical breakthroughs are needed, for example, to double automobile fuel economy, triple the efficiency of lighting systems, or cut typical heating requirements by seventy-five per cent.

Automobiles in 2030 will be apt to get at least 100 miles per gallon of fuel, four times the current average for new cars. A hint of what such vehicles may be like is given in a recently developed prototype, the Volvo LCP 2000. It is an aerodynamic four-passenger car that weighs just half as much as today's models. Moreover, it has a highly efficient and clean-burning diesel engine. With the addition of a continuously variable transmission and a flywheel energy storage device, this vehicle could get ninety miles to the gallon.

Forty years from now, Thomas Edison's revolutionary incandescent light bulbs may be found only in museums, replaced by a variety of new lighting systems, including halogen and sodium lights. The most important new light source may be compact fluorescent bulbs that, for example, use eighteen watts rather than seventy-five to produce the same amount of light.

In 2030, homes are likely to be weather-tight and highly insulated, greatly reducing the need for both heating and cooling.

By the year 2030, a much more diverse set of transportation options will exist. The typical European or Japanese city today has already taken one step toward this future. Highly developed rail and bus systems move people efficiently between home and work: In Tokyo only fifteen per cent of commuters drive cars to the office.

The bicycle will play a major role, as it already does in much of Asia as well as in some industrial-country towns and cities. In Amsterdam and many other communities such as Davis, California, bike-path networks have been developed that encourage widespread use of this form of personal transport. There are already twice as many bikes as cars worldwide. In the bicycle-centred transport system of 2030, the ratio could easily be ten to one.

Forty years from now, people will live closer to their jobs, and much socializing and shopping will be done by bike rather than in a one-ton automobile. Computerized delivery services may allow people to shop from home—consuming less time as well as less energy. In addition, a world that allows only two billion tons of carbon emissions cannot be trucking vast quantities of food and other items thousands of kilometres.

Telecommunications will substitute for travel as well. Many people may work at home or in special satellite offices, connected to colleagues and supervisors by electronic lines rather than crowded highways. Daily trips to the office could be replaced by occasional visits. The saved time and frustration will both raise productivity and the quality of life. The automobile based modern world is now only about forty years old, but with its damaging air pollution and traffic congestion, it does not represent the pinnacle human social evolution. Although a world where cars play a minor role may be hard to imagine, our grandparents would have had a hard time visualizing today's world of traffic jams and smog-filled cities.

IN THE SUSTAINABLE, efficient economy of 2030, waste reduction and recycling industries will have largely replaced the garbage collection and disposal companies of today. The throwaway society that has emerged during the late twentieth century uses so much energy, emits so much carbon and generates so much air pollution, acid rain, water pollution, toxic waste, and rubbish that it is strangling itself. Rooted in planned obsolescence and appeals to convenience, it will be seen by historians as an aberration.

Most materials used today are discarded after one use: roughly two thirds of all aluminium, three quarters of all steel and paper, and an even higher share of plastic. Society will become less energy-intensive and less polluting only if the throwaway mentality is replaced by a recycling ethic.

Just five per cent as much energy is needed to recycle aluminium as to produce it from bauxite ore. For steel produced entirely from scrap, the saving amounts to roughly two thirds. Newsprint from recycled paper takes twenty five to sixty per cent less energy to make than that from wood pulp. And recycling glass saves up to a third of the energy embodied in the original product.

Recycling is also a key to getting land, air, and water pollution down to acceptable levels. For example, steel produced from scrap reduces air pollution by eighty-five per cent, cuts water pollution by seventy-six per cent, and eliminates mining wastes altogether. Paper from recycled material reduces pollurants entering the air by seventy-four per cent and the water by thirty-five per cent, as well as reducing pressures on forests in direct proportion to the amount recycled.

A hierarchy of options can guide materials policy: the first priority, of course, is to avoid using any nonessential item, a goal that can be furthered by concentrating design talents on durability instead of planned obsolescence. Second is to directly reuse a product, for example, refilling a glass beverage container. The third is to recycle the material to form a new product. Fourth, the material can be burned to extract whatever energy it contains, as long as this can be done safely. And finally, the option or last resort is disposal in a landfill.

For many cities, garbage disposal costs during the last decade increased several-fold, making it cost-effective for them to help establish recycling industries. During the nineties, this trend will be reinforced by the need to reduce carbon emissions, air pollution, acid rain, and toxic waste. In the early stages, countries will move toward comprehensive, systematic recycling of metal, glass, paper, and other materials, beginning with a source separation at the consumer level.

In the sustainable economy of 2030, the principal source of materials for industry will be recycled goods. Most of the raw material for the aluminium mill will come from the local scrap collection centre, not from the bauxite mine. Paper and paper products will be produced at recycling mills, with recycled paper moving through a hierarchy of uses, from high-quality bond to newsprint and, eventually, into cardboard boxes. Industries will turn to virgin raw materials only to replace any losses in use and recycling.

Although early moves away from the throwaway society are concentrating on recycling, sustainability over the long term depends more on eliminating waste flows. One of the most obvious places to reduce the volume of waste generated is in industry where a restructuring of manufacturing processes can easily slash wastes by a third or more.

Another major potential source of waste reduction lies in the simplification of food packaging. In the United States, consumers spent more on food packaging in 1986 than American farmers earned selling their crops. In the interest of attracting customers, items are sometimes buried in three or four layers of packaging. Forty years from now, government regulation is likely to have eliminated excessive packaging. Throwaway grocery bags will have been

replaced by durable, reusable bags of canvas or other material.

Societies in 2030 may also have decided to replace multi-sized and shaped beverage containers with a set of standardized ones made of durable glass that can be reused many times. These could be used for most, if not all, beverages, such as fruit juices, beer, milk, and soda pop. Containers returned to the supermarket or other outlet might become part of an urban or regional computerized inventory.

IN ADDITION TO RECYCLING and reusing metal, glass, and paper, a sustainable society also recycles nutrients. In nature, one organism's waste is another's sustenance; in urban societies, however, human sewage has become a troublesome source of pollutants in rivers, lakes, and coastal waters. The nutrient in human wastes can be reused safely as long as the process includes measures to prevent the spread of disease.

In some Asian cities, human waste is already systematically returned to the land in vegetable-growing green belts around cities. Intensively farmed cropland surrounding some cities there produces vegetables year-round using greenhouses or plastic covering during the winter to extend the growing season. Perhaps the best model is Shanghai: after modestly expanding its urban political boundaries to facilitate sewage recycling, the city now produces an exportable surplus of vegetables.

Some cities will probably find it more efficient to use treated human sewage to fertilise aquaculture operations. A steady flow of nutrients from human waste into ponds can supply food for a vigorously growing population of algae that in turn are consumed by fish. In Calcutta, a sewage-fed aquaculture system now provides 20,000 kilograms of fresh fish each day for sale in the city.

SOCIETIES IN 2030 will be using the land intensively; the needs of a population more than half again as large as today's cannot be met otherwise. But unlike the present, land use patterns would be abiding by basic principles of biological stability: nutrient retention, carbon balance, soil protection, water conservation, and preservation of species diversity. Harvests will rarely exceed sustainable yields.

Meeting food needs will pose monumental challenges, as some simple numbers illustrate. By 2030, assuming cropland area expands by five per cent between now and then and that population grows to eight billion, cropland per person will have dropped to a third less than we have in today's inadequately fed world. Virtually all of Asia, and especially China, will be struggling to feed its people from a far more meagre cropland area per person.

In light of these constraints, the rural landscapes of 2030 are likely to exhibit greater diversity than they do now. Variations in soils, slope, climatic, and water availability will require different patterns and strains of crops grown in different ways so as to maximize sustainable output. For example, farmers may adopt numerous forms of agroforestry; the combined production of crops and trees to provide food, biomass, and fodder, while also adding nutrients to soils and controlling water runoff.

THE FUNDAMENTAL CHANGES that are needed in energy, forestry, agriculture, and other physical systems cannot occur without corresponding shifts in the social, economic, and moral character of human societies. During the transition to sustainability, political leaders and citizens alike will be forced to reevaluate their goals and aspirations and to adjust to a new set of principles that have at their core the welfare of future generations.

Shifts in employment will be among the most visible as the transition gets under way. Moving from fossil fuels to a diverse set of renewable energy sources, extracting fewer materials from the earth and recycling more, and revamping farming and forestry practices will greatly expand opportunities in new areas. Losses in coal mining, auto production, and metals prospecting will be offset by gains in the manufacture and sale of photovoltaic solar cells, wind turbines, bicycles, mass transit equipment, and a host of materials recycling technologies.

Wind prospectors, energy efficiency auditors, and solar architects will be among the booming professions stemming from the shift to a highly efficient, renewable energy economy. Numbering in the hundreds of thousands today, jobs in these fields may collectively total in the millions worldwide within a few decades. Opportunities in forestry will expand markedly.

Many people will find their skills valued in new or expanded lines of work. Petroleum geologists may be retrained as geothermal geologists, for example, while traditional midwives continue to broaden their roles to include the spectrum of family planning needs.

Long before 2030, the trend toward ever larger cities and an increasing ratio of urban-to-rural dwellers is likely to have reversed. For example, the increasing energy intensity of food distribution necessitated by cities cannot continue indefinitely. Smaller human settlements will also be favoured by the shift to renewable energy sources.

Power from renewable technologies, whether photovoltaic cells, wood-fired plants, or wind generators, will allow local areas to capitalize on their natural endowments, whether that be strong winds, bright sunshine, abundant woodlands, or proximity to geothermal reservoirs. In so doing, they foster greater local self-reliance.

As the transition to a more environmentally benign economy progresses, sustainability will gradually eclipse growth as the focus of economic policy-making. Over the next few decades, government policies will encourage investments that promote stability and endurance at the expense of those that simply expand short-term production.

As a yardstick of progress, the gross national product (GNP) will be seen as a bankrupt indicator. By measuring

flows of goods and services, GNP undervalues qualities a sustainable society strives for, such as durability and resource protection, and overvalues planned obsolescence and waste. The pollution caused by a coal-burning power plant, for instance, raises GNP by requiring expenditures on lung disease treatment and the purchase of a scrubber to control emissions. Yet society would be far better off if power were generated in ways that did not pollute the air in the first place.

In 2030, planners will measure economic and social advances by sustainability criteria rather than simply by growth in short-term output. As economist Herman Daly observes, a new direction of technical progress is needed, 'one that squeezes more service per unit of resource, rather than one that just runs more resources through the system'. National military budgets in a sustainable world will be a small fraction of what they are today. Moreover, sustainability cannot be achieved without a massive shift of resources from military endeavours into energy efficiency, soil conservation, tree planting, family planning, and other needed development activities. Rather than maintaining large defence establishments, governments may come to rely on a strengthened UN peacekeeping force.

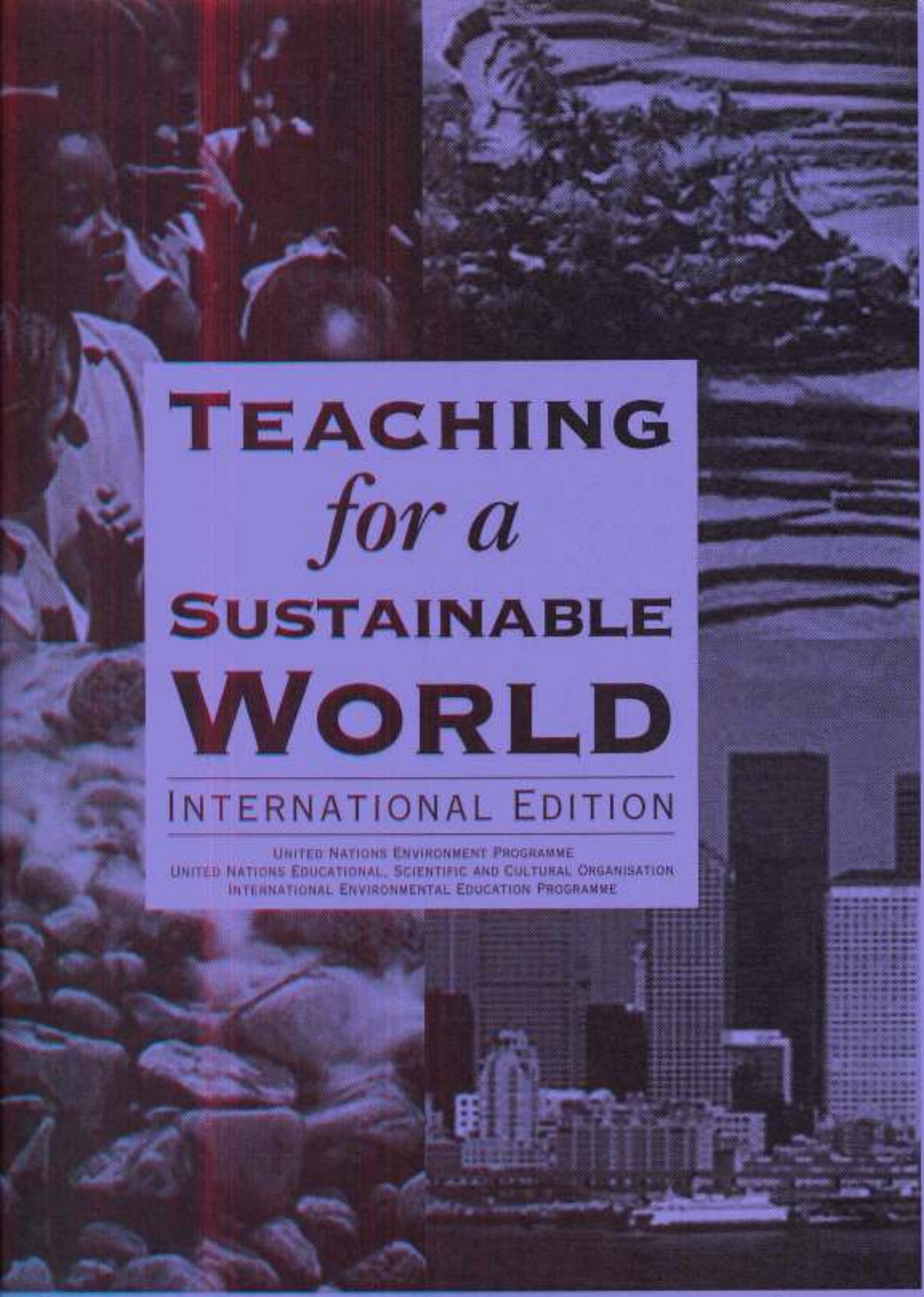
Nations will undoubtedly be co-operating in numerous other ways as well. Careful tracking of changes in atmospheric chemistry, forest cover, land productivity, and ocean resources will be among the many efforts handled by multinational teams of scientists and government workers. Even as individual nations move to decentralize power and decision making within their own borders, they may simultaneously establish an unprecedented degree of co-operation and co-ordination at the international level.

Movement toward a lasting society cannot occur without a transformation of individual priorities and values. Throughout the ages, philosophers and religious leaders have denounced materialism as a viable path to human fulfilment. Yet societies across the ideological spectrum have persisted in equating quality of life with increased consumption.

Because of the strain on resources it creates, materialism simply cannot survive the transition to a sustainable world. As public understanding of the need to adopt simpler and less consumptive life-styles spreads, it will become unfashionable to own fancy new cars and clothes. The potential benefits of unleashing the human energy now devoted to producing advertising, buying, consuming, and discarding material goods are enormous.

This energy can be channelled into forming richer human relationships, stronger communities, and greater outlets for cultural diversity, music and the arts. As the amassing of personal and national wealth becomes less of a goal, the gap between haves and have-nots will gradually close.

Lester Brown is President of Worldwatch Institute. He is a recipient of a $250,000 MacArthur Foundation 'genius award' and winner of the UN's 1989 environment prize.



MODULE 8

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP

AusAID

AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC.

GRIFFITH UNIVERSITY

CULTURE *and* RELIGION:

IMPORTANT LESSONS FOR SUSTAINABLE LIVING

HILARY MACLEOD
QUEENSLAND DEPARTMENT OF EDUCATION
AUSTRALIA

HUM B. GURUNG
ANNAPURNA CONSERVATION AREA PROJECT
NEPAL

INTRODUCTION

This module provides an introduction to the culture and religion of indigenous people as a basis for sustainable living in traditional societies.

For thousands of years, indigenous people throughout the world have lived closely with nature for their survival and used natural resources in a sustainable manner. These people called the 'ecosystem' people have managed the resource base and used their surrounding environment to maintain their life support system.

Ecosystem people (traditional people) are the members of indigenous cultures who live within a single ecosystem, or at most two or three adjacent and closely related ecosystems. Hunting and gathering societies that exploit only their local area, primitive fishing societies that harvest nearby reefs, and subsistence agricultural societies that till local fields would all be considered examples of traditional societies practicing traditional systems of resource management (Dasman, 1974, cited in Klee, 1980).

Traditional cultures and religions contain vast stores of knowledge and wisdom, accumulated over centuries, about the potential and actual usefulness to human welfare of natural resources unique to their own environment. For example, the religious and cultural parameters developed on the basis of Hinduism and Buddhism have profound implications for caring for our environment which underpin the principles of ecology and contain a long history of mutual relationships with the natural world. Sustainable use of the environment and respect for the environment by the indigenous people have demonstrated that a traditional society is more co-existent with nature, and practice of their cultural and religious values could become a basis for sustainable living.

OUTCOMES

This workshop seeks to enable participants to:

- understand the concepts of religion, culture and cultural models;
- understand the relationship between religion, culture and nature;
- critically analyse the principles of sustainable living in terms of their own cultural context;
- use the principles of sustainable living to develop implications for their personal way of life; and
- develop an outline programme and a detailed activity for teaching about religion, culture and the environment.

WORKSHOP OUTLINE

1. Introduction

This outlines the structure of the workshop.

2. Personal Reflections

The activity involves participants sharing personal reflections on cultural-environmental links.

3. Overview of Major World Religions

Participants work in groups to construct a table which summarises how major religions and traditions influence environmental beliefs and identify common themes about sustainable living in the world's religions.

4. The Link Between Culture, Religion and the Environment

Discussion of the link between culture, religion and the environment.

5. Case Study: The Annapurna Region of Nepal

This activity provides a case study of the culture-religion-environment relationship in the Annapurna region of Nepal.

6. Putting it into Practice

Participants will design a curriculum programme around an issue linking culture, religion and the environment.

MATERIALS REQUIRED

OVERHEAD TRANSPARENCY MASTER

OHT 1: Workshop Outline

RESOURCES

Resource 1: A Universal Environmental Ethic: The Ultimate Goal of Environmental Education

Resource 2: World Religions and the Environment

Resource 3: Defining Culture

Resource 4: Defining Religion

Resource 5: ACAP Case Study 1: The Annapurna Region of Nepal

Resource 6: ACAP Case Study 2: The Annapurna Conservation Area Project

Resource 7: ACAP Case Study 3: Personal Perspectives 1 and 2

Resource 8: Following the Principles of Sustainable Living

READING

Reading 1: Culture and Religion: A Mechanism for Breaking Down the Barriers to Environmental Education

ADDITIONAL READING

Burger, J. (1990) *The Gaia Atlas of First Peoples: A Future for the Indigenous World*, Anchor Books, Doubleday, New York.

Gurung, C.P. (1990) People's Participation in Conservation: Annapurna Conservation Area Project: A Case Study from Nepal, *Proceedings of the International Conference on Tropical Biodiversity 'In Harmony with Nature'*, 12-16 June 1990, Kuala Lumpur, Malaysia, pp. 74-85.

Haigh, M.(1984) The Chipko Movement, *Links 19, Third World First*.

Knudson, P. and Suzuki, D. (1992) *Wisdom of the Elders*, Allen and Unwin, Toronto.

Palmer, M. and Bissett, E. (1989) *Worlds of Difference*, WWF in association with Thomas Nelson and Son, London.

Palmer, S. (1988) Environmental Education in Religious Education, in *A Common Purpose: EE and the School Curriculum*, WWF, London.

Pie-Smith, C. (1994) Nepal: Annapurna Conservation Area Project, in *The Wealth of Communities*, Earthscan Publications, London.

Sterling, S.R. (1985) Culture, Ethics and Environment - Towards the Next Synthesis, *The Environmentalist*, 5(3).

West, P. and Brechin, S. (eds.) (1991) *Resident Peoples and National Parks: Social Dilemmas and Strategies in International Conservation*, The University of Arizona Press, Tucson.

WWF (1992) *World Religions and Ecology Series*, WWF in association with Cassell.

— *Buddhism and Ecology* (eds. Batchelor, M. and Brown, K.)

— *Christianity and Ecology* (eds. Breilly, E. and Palmer, M.)

— *Hinduism and Ecology* (Ranchor Prime)

— *Islam and Ecology* (eds. Khalid, F. and O'Brien, J.)

— *Judaism and Ecology* (ed. Rose, A.)

Additional resources and information for the ACAP case study may be obtained from:

Annapurna Conservation Area Project (ACAP)
ACAP Headquarters
Ghandruk Village
Kaski District
Nepal.

King Mahendra Trust for Nature Conservation
PO Box 3712
Kathmandu
Nepal.

Tel: 977-1-526571/573
Fax: 977-1-526570

1. Outline

- Explain the rationale for the workshop. You may wish to use the quotation on OHT 1 at this point.
- Outline the sequence of the workshop using OHT 1.

2. Ice Breaker

Group participants in clusters of 4-5 people. Ask each participant to share a proverb, myth, legend, saying or issue from their culture that indicates the significance of the environment.

Debriefing: Select one or two examples and briefly discuss the relationship between the example and the culture.

3. World Religions: Implications for Sustainable Living

Discuss how, in different parts of the world, religious beliefs and/or indigenous cultural perspectives influence beliefs about the environment and result in implications for sustainable living.

Distribute copies of Resources 1 and 2. In this activity, participants work in their groups to summarise information about religious beliefs and the environment from Resource 1 onto the table in Resource 2.

Explain to the participants that the table will attempt to do an almost impossible task; to summarise such complex concepts in one table is certain to lead to oversimplification, and that the intention of the activity is to provide a snapshot only.

Allocate one of the religions in Resource 1 to each group and give instructions to read about that religion and summarise the information onto the table in Resource 2.

Compile a whole group version of Resource 2 by asking all groups to report their summaries, especially of Columns 2 and 3 on the various religion's beliefs about the environment and the implications for sustainable living. The group reports might be pinned to the walls or a notice board for all groups to read.

4. Common Themes

After assisting participants to understand the information in their completed tables in Resource 2, ask them to consider Column 3: Implications for Sustainable Living.

Ask participants to identify three common themes/practices that most religions believe about sustainable living.

5. Mini-Lecture on Culture and Religion

Use Resources 3 and 4 as handouts (or OHTs) to explain the concepts of 'culture' and 'religion' to a depth appropriate to the objectives of the workshop.

6. Case Study: The Annapurna Region of Nepal

This activity uses Resources 5, 6 and 7 to provide a case study of the relationship between culture, religion and the environment in one part of the world, the

Annapurna region. Facilitators may choose to use this case study or to use it as a model to develop a local or more relevant case study.

The case study material is broken up into three sections. At the end of each section there are discussion questions that can be used to debrief and check for understanding.

The three sections are:

Resource 5: ACAP Case Study 1: The Annapurna Region of Nepal.

Resource 6: ACAP Case Study 2: The Annapurna Conservation Area Project.

Resource 7: ACAP Case Study 3: Personal Perspectives.

Use Resource 5 as the basis of a mini-lecture or as a group reading to introduce the geography and culture of the Annapurna region.

Divide participants into two groups and allocate Resource 6 or 7 to each group. Their tasks are to read the material and to answer the questions at the end.

Each group reports its answers in a debriefing session. This will allow all participants to obtain information on the two topics. Allow 40-50 minutes for the group work.

7. Putting Theory into Practice

In these activities, participants critically analyse selected principles of sustainable living in terms of their own cultural context, design an appropriate activity to motivate their community, use principles of sustainable living to develop implications for their personal lifestyle, and design a curriculum programme around a focus issue linking culture, religion and the environment.

A. Principles of Sustainable Living

Distribute Resource 8 which examines ACAP's programme in the light of a selected list of principles of sustainable living from the module on *Teaching for Ecologically Sustainable Development*. Ask the participants to complete Column 3 in pairs.

B. Community Motivation

Ask participants to select one action from Column 3 and devise a motivational activity for their community.

C. Personal Lifestyle Implications

This activity begins with an examination of the elements of each participant's educational context. The participants will discuss in a group their background, the educational context and the implications for planning a workshop.

D. Designing a Curriculum Programme

Allow the participants time to prepare a brief outline of the approach they would use to deliver a workshop that examines the link between culture, religion and the environment. The outline should address:

- audience/class characteristics
- selected focus issue
- objectives (knowledge, skill and values)
- resources (human and material)
- evaluation methodology

Ask participants to share their plans with others. Depending on the size of the group this could be done in small groups or with selected participants in a large group. Encourage comments from other participants.



OHT 1

WORKSHOP OUTLINE

> There are places in the world, for example, where people have never heard of environmental education, but where many of its prime goals are already widely practised as a result of certain long-held religious and cultural beliefs that place high value on the wise custodianship of the natural world.
>
> Allen Schmider (1977)

1. Introduction: The Structure of the Workshop.
2. Ice Breaker: Personal Reflections on Cultural-Environmental Links.
3. Overview of Major World Religions
4. Mini-lecture: The Link between Culture, Religion and the Environment.
5. Case Study: The Annapurna Region of Nepal.
6. Putting it into Practice: Planning an Educational Programme.

RESOURCE 1

A UNIVERSAL ENVIRONMENTAL ETHIC: THE ULTIMATE GOAL OF ENVIRONMENTAL EDUCATION

Source: *Connect*, XVI (2), 1991, 1-5.

An ethic may be thought of as an *ideal* of human behaviour and an environmental ethic as ideal human behaviour with respect to the environment, natural and built. One senses a newly emergent environmental ethic in the growing concern about the environment, in swelling movements to save the Earth, indeed in current and encouraging national and international environmental laws and regulations. Yet, we know that, as in the more familiar context of social interaction, strict obedience to the letter of the law must be complemented and supplemented by individual moral sensibility and conscience, by environmentally-ideal human behaviour, an ultimate goal of environmental education.

The examples are simple and homely. Many countries, a vast number of towns and communities, have enacted laws and established rules to prevent the littering of public roads, lands and gardens, Such laws and regulations reflect an often newly acquired collective moral sensitivity to the environment. However, we know, even guiltily, that one may *legally* litter one's own home and one's back yard, if one owns one. An environmental ethic, created or reinforced, would discourage one from doing so, even if one were alone. We may never perfectly achieve harmony with nature, but the existence of an environmental ethic, partly encoded in laws, but largely a matter of sensibility and conscience, can draw individuals in the direction of that ultimate goal of environmental education, namely, environmentally-ideal personal behaviour.

Think globally; act locally has become the universal slogan of the environmentally concerned. It implies a *universal environmental ethic* towards which, one feels, we are massively moving. What are the principles in common in that movement and its varieties, how can they be educationally strengthened, developed, *universalised*? The beginning may lie in a comparative study of environmental cultures and ethics across the borders of time and space.

Hinduism

Chronologically one might commence with *Hinduism*, whose origins reach into the dim historical past and resist facile doctrinal definition. Roughly contemporary with the Greek epics of Homer and Hesiod are the Vedas, composed by Aryans who brought them to India and in which we find a pagan polytheism with clear affinities to the pagan polytheism of the Greeks, who were from the same Indo-European linguistic, cultural, and racial stock. The gods, identified with and manifested by features, forces and processes of nature (Sky, Earth, Thunder, and so on) were propitiated with animal sacrifice, entreated with prayer, and commanded by magical incantation.

Hindu thought gravitated toward belief in an inner, unseen, abstract reality, underlying the manifest world disclosed to the senses. For people (and other living things) it was *Atman*, the spirit of inner self, in contrast to the body. More expansively and abstractly still, all things in the divided, articulate world disclosed to the senses are manifestations of inner Being, *Brahman*. Atman and Brahman, in turn, came to be conceptually united so that the inner Being or essence of all things is soul, spiritual being, or consciousness. Objective knowledge and subjective knowledge thus coalesce. To know ones' self, not one's personality or empirical self, but one's transcendental self, is to know the nature of all things.

The empirical world is both unimportant, because ultimately unreal, and contemptible, since it seduces the soul into illusion and bad karma. It distracts the soul from finding itself, attaining liberation, and merging with the one essential, transcendental self, i.e. from achieving nirvana. On the other hand, since the essential or transcendental self of each person is the same, 'same' in the strongest sense, literally identical with the Self of Being *per se* in everything else, one is led to empathy and compassion. Other forms of being, particularly other forms of life, are victims of the same deceit, frustration, and suffering as oneself and should be pitied. Indeed, there is no real distinction between self and other. One cannot, thus, profit at the expense of others, either other human beings or other natural, environmental beings since, ultimately, there are no 'others' - all are ephemeral manifestations of one indivisible Being.

Lastly, there is a correspondence between the ecological world view and the world view of Hindu thought. Ecology also represents the world as a unity, that is, holistically - the unity of oneself and one's surroundings. Thus, there are two major elements in Hinduism which contribute to the development of a universal environmental ethic: empathy and compassion regarding all living things and a sense of harmony with the environment, therefore its protection and enhancement.

Jainism

In *Jainism*, more than in Hinduism or Buddhism, one finds an explicit environmental ethic. Jainism, in contrast to the core philosophy of Hinduism as discussed, is dualistic rather than monistic. There is a fundamental dichotomy between soul and body, mind and matter. Each soul, moreover, maintains its own integrity. It is not a manifestation of the universal soul. Every living thing is endowed with such a soul. And, although in each living thing the soul is, as it were, crusted over with flesh and its consciousness dimmed and confused with sensory perceptions of various modes and degrees of clarity, all souls are equally pure and perfect in and of themselves.

At the moral core of Jainism is the doctrine of *ahimsa*, the determination not to kill or harm any living thing which contains a soul as perfect or complete as one's own and which is as liable to suffering as oneself. The Jains are famous for the extreme lengths to which they go to honour this doctrine. Of course, the eating of meat especially is prohibited since animal empirical consciousness is more acute than plant consciousness. Mahavira, the founder of Jainism, himself, only ate leftover food, prepared for someone else, so as not to have personally caused injury even to the plants, or their seed, from which it was made. Moreover, food must be inspected before eating to assure that insect eggs or mites are not consumed inadvertently. Similarly, water must be strained, not to protect one's health, but to avoid consuming any organisms in the water. One ought even to sweep one's path before walking so that one's footfall does not injure or kill any living thing. Ahimsa is a doctrine of extreme concern for other living things. It is in this respect a kind of environmental ethic contributing to the universal environmental ethic aimed at.

Buddhism

Buddhism stems from the teachings of Siddharta Gautama, who lived in India during the sixth century BC. Buddhism, however, today flourishes less in India than in countries to the south and east of India, namely, Sri Lanka, Myanmar, Thailand, Kampuchea, Laos, Vietnam, China, Korea, Japan, Tibet, and Mongolia.

Core moral values in Buddhism are to be found in the five precepts: abstention from killing living creatures, abstention from stealing, abstention from lying and abstention from taking intoxicants. While these precepts embody the basic requirements for the living of a good life and the establishment of a good community, some of these are relevant to a conservationist ethic. The respect for life and property, the rejection of hedonistic life styles and the notion of truthfulness emphasising consistency in thought and action are all ethical premises relevant for the development of environmental ethics.

The Buddhist precept concerning abstention from killing living creatures focuses attention on the ethical premise concerning the value of life. The Buddha asked people to abstain from destroying the life of human beings and animals and also condemned the infliction of suffering and pain on living creatures. He was also critical of the pleasures of hunting. The kings were expected to provide protected territory not only for human beings but also for the beasts of the forests and birds of the air. The principle of ahimsa, non-harming and non-injury to life, was a concept found in the Jains and other Indian sects and the Buddha (though he did not go to the extremes of the Jains) was alive to the concept and preached against taking life. All this shows great feeling of sympathy for living creatures.

What can be inferred from the philosophy of Buddhism is a pro-conservationist (sound management) conception towards nature, which is critical of an aggressive attempt to exploit the environment for short-term benefits and generate gigantism, and a life style based on limitless consumerism. In short, a non-violent and gentle attitude towards nature, animals and fellow people provides the essence of the environmental stance - the environmental ethic - of Buddhism.

Zen Buddhism

Zen Buddhism provides an especially fitting philosophical and experiential basis for an environmental ethic: the phenomenal world is affirmed as the delightful expression, the artifice and play of the benign and loving common essence in all things. There is, moreover, a very strong tradition, evident in Zen poetry and art, of a nature aesthetic. The contemplation of the fleeting yet eternal moment of satori are all elements of an aesthetic attitude towards the environment. And the aesthetic value of nature has long served as a powerful human motive for its conservation.

Taoism

Zen Buddhism has certain affinities with *Taoism*, since Zen is a version of Buddhism which evolved in China, where Taoism is native. The *tao* literally means a way, or a road. It is the way of the universe, the orderly and harmonious unfolding of phenomena, the developmental tendency of things. If allowed to take its course, it results in natural fulfilment and perfection.

Taoism stresses the perfection of harmony between humanity and nature. It also provides the basis for a philosophy of technological development. The traditional Western forms of 'high' and 'hard' technology should be abandoned from the Taoist point of view, for forms of 'low' and 'soft' technology or what is sometimes called 'appropriate' technology. An appropriate technology is essentially adaptive and cooperative. It does not attempt to command or

control nature; rather, its approach is to bend natural processes to human advantage and adapt human ways of life to the environment.

Like Zen Buddhism, Taoism conceives the environment as an articulate unity, a unity among natural things and these things with humanity. This picture of nature as an autonomous and dynamic whole, in which humanity has its fitting and appropriate place, fits well the world view of ecology which has been described.

Confucianism

Confucius also accepted the Tao, but focussed on the order of human society. Just as nature is an orderly and harmonious realm so ought human society to be equally orderly and harmonious. Confucianism supports an anthropocentric environmental ethic. Environmental destruction, degradation and defilement would in most cases impose deleterious effects on other people and thus violate the first two Confucian virtues, regard for others and justice. A third virtue being wisdom, it would also be plainly unwise, because imprudent or profligate, and violate a fourth virtue, namely, faithfulness to one's children or one's children's children or to one's more remote posterity. The contribution to a universal environmental ethic is clear.

Judaism and Christianity

During the past fifteen years of heightened environmental consciousness there has been intense controversy about the environmental attitudes of the *Judeo-Christian* tradition. Most of the controversy has centred on the relationship between God, People and Nature in the book of Genesis in the Bible.

Environmentalist critics of Genesis have claimed that since, according to Genesis, humanity is created in the image of God and given dominion over nature and commanded to subdue the Earth, Genesis clearly awards people a God-given right to exploit the Earth without moral restraint (except insofar as environmental exploitation may adversely affect people). Humanity's unique essence among creatures, constituted in the image of God, confers upon humans unique rights and privileges among creatures. Further, God seems to have intended humans to be God's viceroy upon the Earth. People are to the rest of creation as God is to people. Thus if God is the lord and master of humans, so humans are lords and masters of Nature. This may be called the mastery interpretation of Genesis.

Judeo-Christian apologists have contested both this interpretation of Genesis and the untoward environmental ethical implications drawn from it. The unique essence of humans to have been created in the image of God confers, it is argued, not only special rights and privileges but also special duties and responsibilities. Paramount among these responsibilities is the responsibility to rule the dominion of Earth wisely and benignly. To abuse, degrade, or destroy the Earth is to violate the trust the regent (God) placed upon human viceroys. This interpretation may be called the stewardship interpretation of Genesis.

There are two separate creation myths in Genesis: The first account which begins (rather than ends) with the creation of the Garden of Eden and humans in a single day is centuries older than the second account which begins with the creation of light and the division of waters on the first day and ends with the creation of humans on the sixth. The older, even more ambiguous, belief also is subject to two conflicting interpretations about the proper role of people in relation to Nature. It is in this belief that one finds that the role assigned to humans by God is to dress the Garden of Eden (which might be interpreted to mean Nature as a whole) and keep it. This injunction together with naming the animals and thus establishing a kind of power over them and prerogative respecting them suggests the kind of responsible, benign vice-regency of the stewardship interpretation.

There are, as well, three possible environmental ethics consistent with the Judeo-Christian world-view, depending upon its interpretation: (1) an indirect anthropocentric, utilitarian environmental ethic associated with mastery; (2) a more direct biocentric environmental ethic associated with stewardship; and (3) a direct biocentric environmental ethic associated with citizenship. While both the environmental ethics associated with stewardship and citizenship are direct and biocentric, they differ in their practical implications. The former would permit benign management of Nature and wise use while the latter would imply a laissez *faire*, live-and-let-live approach, incompatible with the present more positive attitude toward environmental protection and improvement. The environmental ethic associated with stewardship is thus both the most practical and the most acceptable interpretation consistent with the Judeo-Christian tradition. Further, since it is a possible interpretation of the role intended for people by God in both the creation myths of Genesis, it seems the most plausible interpretation of the overall gist of the text as it has come down to us, and its most effective contribution to a universal environmental ethic.

Indeed, current teaching on the environment - as exemplified by Pope John Paul II's Encyclical on the Environment (1990) - stresses humanity's stewardship of nature. People are the guardians, the protectors, of the environment, not its owners. A way of loving one's fellow human beings as oneself, the Encyclical states, is to protect the environment and natural resources on which they depend.

Greek Mythology and Philosophy

The other primary source of Western culture and civilisation is *Greek mythology* and later, *philosophy*, which was disseminated throughout the Mediterranean basin by the Macedonian and Roman empires. A fairly rational account of the world, initiated early in the sixth century BC, is the living legacy, due to its revival during the European Renaissance, which was followed directly by the rapid development of Western science, and is thus essentially Greek in both origin and fundamental character.

The dominant strains were Pythagorean, Platonic and Democritean. Some see a nascent environmental ethic in Pythagoras' belief in the transmigration of souls from human beings to animals and from animals to human beings, extending ethics beyond the sphere of human relationships to non-human natural beings. However, the Pythagorean ethic has closer affinities to the contemporary animal liberation/animal rights ethic than to an ecological/environmental ethic. Moreover this concept of the soul as contaminated by its bodily and earthly prison or tomb and thus alienated from the natural environment is profoundly antithetical to an environmental ethic preaching the harmony of humanity and the environment.

This dualistic concept - a divine soul in an alien, mortal body - became a cornerstone of the later philosophy of Plato, and thanks to his enormous influence, became virtually institutionalised in Western culture and civilisation, both religious and secular. Meanwhile Greek philosophers were also occupied with the physical world, the nature of nature, one might say. It reached a culmination with Leucippus and especially Democritus, who developed the atomic theory of matter - atoms as indivisible, solid particles composing all material objects.

The resulting concept of nature as materialistic and mechanical, and of humans, because of the soul, as essentially divine and both separate from and superior to nature, has reinforced the notion of incompatibility rather than harmony with the environment. In this respect the Greek philosophical tradition of Pythagorean-Platonic dualism and Democritean atomism can be said to lie more heavily at the roots of present environmental problems than contribute to an environmental ethic. However, the other aspect, namely, the Greek stimulus to a scientific attitude, while resulting in a technology which has so often had negative environmental impacts, can also develop appropriate, environmentally conceived technology to prevent and correct the problems created by the former.

In this sense, too, Greek philosophical tradition can contribute an essential component of an environmental ethic - scientifically sound environmentalism, that is the rationale of a secular environmental ethics.

Islam

Although the culture and civilisation of the Middle East and North Africa are rooted in the Judeo-Christian and Greco-Roman traditions, there is a third major element which spread world-wide - *Islam*. During the European Dark Age, Greek science was preserved and developed by Islamic scholars and Mohammed, the prophet of Islam, regarded himself as a prophet of the same God and in the same prophetic tradition as Jesus, Moses, and Abraham before him. The Islamic cultural tradition, therefore, has been substantially influenced by Judeo-Christian and Greco-Roman ideas, although it constitutes a distinctive historical and cultural context for environmental ethics.

The Koran is less ambiguous than Genesis about the relationship of human beings to nature. It makes explicit certain themes which are only suggested implicitly in the more ancient account in Genesis. According to the Koran, Allah created the first man and woman, Adam and his wife, from a clot, or clay, or dust, and breathed into His creation the breath of life. All other things are explicitly created by Allah for the sake of, the use of, and the benefit of people. Adam and his seed are explicitly made to be the viceroys of God on Earth. According to Islam, then, people are at the moral centre of creation and are, indeed, the very purpose of the creation. As in Genesis, so also in the Koran, it is a human right to have dominion over and to subdue the Earth and all its non-human denizens. Indeed, in the Koran, not only are animals and plants subjected to people, the rivers, the sea, even the sun and moon are subservient. Human dominion over the earth and the subordination of the creation to people is spelled out in no uncertain terms.

Humanity's role as viceroy or agent on earth should not, however, be confused with tyranny. Human dominion over the Earth should be benign, not wantonly destructive. The doctrines of Islam are equally explicit and emphatic that humanity's relation to nature should be one of stewardship not mastery.

The creation of Allah is, as it were, a divine work of art. The whole world and all of its parts are understood in Islam as 'signs' of the greatness, the goodness, the subtlety, the richness, and so on of the creator. To deface, defile or destroy nature would be an impious or even blasphemous act. Although humans are accorded the usufruct of the Earth, this does not include the right to abuse it with impunity.

The sanctions on environmental abuse (direct abuse of the natural environment, setting aside, for the moment, the indirect effects of people) are of two kinds. The Earth is a temporary abode and Allah, according to Islam, rewards and punishes deeds done on Earth in the next life. Persons, therefore, who blaspheme against God by defac-

ing, defiling, or destroying His creation will be punished accordingly in the next life.

However, even though the Earth is only a temporary abode and meant to be at the service of humanity, people are very much at one with the Earth, at least while living on it. People are made of the stuff of the Earth, dust or clay, and, albeit exalted above all others, are creatures among creatures. There should thus be a kind of fellowship between people and other creatures, according to Islam. Islam, moreover, values scientific knowledge of the environment, whose study is encouraged and supported by the doctrine of signs. As we learn more about the natural world, through the geological and biological sciences, it has become abundantly clear that the natural environment is systemically integrated, a seamless whole. Hence, the destruction of one part of the environment will reverberate throughout the whole. Now as humans, according to Islam, are, after all, made of the stuff of the Earth, a creature among creatures, environmental destruction is necessarily self-destruction. This too is a kind of sanction against environmental abuse - a this-worldly, not other-worldly, type of sanction.

The Islamic tradition clearly supports, perhaps even more unequivocally than the Judeo-Christian tradition, a direct biocentric environmental ethic of the stewardship type. The environment, though given over to humans and subservient to humans, is the direct object of respect and care, because it is the handiwork of God and a sign of His power and majesty. The Islamic tradition also clearly supports an indirect anthropocentric environmental ethic.

According to Islam, all human beings are descended from Adam and Eve. Hence all human beings, regardless of race, colour, or national origin, are equally members of one extended family: no people are privileged or chosen; no one is inherently better than anyone else. In Islam, moreover, there is a strong emphasis on justice. Justice, indeed, is one of the cornerstones of the Moslem religion. Since environmental abuse and/or destruction are, more often than not, harmful to people, they are a form of injustice. To ruin or destroy the environment is tantamount to either bodily injury or the destruction or theft of property or both. Further, ignorance of the complex or delayed effects of action in the environmental arena is no excuse, since Islam stresses the moral importance of knowledge, no less than of justice. These are all truly elements of an environmental ethic with universal implications.

Conclusion

Reviewing the foregoing traditional cultures and religions to find what they have in common with regard to humanity's relationship and responsibility vis-a-vis the environment - in other words, the common ingredients of a universal environmental ethic - is the historic role of environmental education. An ethical attitude toward the environment, personally and professionally, individually and collectively, and universally valid, is both the assumption and the goal of this new great field of education, making environmental education the principal, indispensable instrument for its development.

Indeed the aim of this article has been to provide the cultural and religious background and elements for just such an environmental education programme activity. The nascent environmental ethics demonstrated in the various traditional beliefs may be developed in two complementary ways. Firstly, both inside and outside the formal school system, by contemporary cultural custodians - priests, rabbis, mullahs, scholars, and religious and secular educators generally, who are environmentally aware, who speak with authority for their respective intellectual traditions, and who realise that living bodies of belief change and evolve in response to the vital needs of the times.

Secondly, they may be developed through alliance with contemporary scientific concepts and research findings of the biological and environmental sciences. Some modern scientists even argue that they are often simply *rediscovering* concepts intuitively grasped in traditionally cultural world views. For example, Taoism appears to have understood the cyclical nature of biological processes, the American Indians' ideological interdependency, Hinduism and Jainism the continuity of life, Animist religions, as well, strongly emphasise the link between humanity and the environment. And so on. Traditional environmental attitudes, resting upon such intuitively grasped ideas, can frequently be reinforced, enriched and developed by means of the more detailed theories and findings of the contemporary life sciences.

In turn - and as a conclusion - environmental education and its ethical component not only find their roots in these world cultures and religions, but their sound development requires that they be solidly anchored in them - with due regard for the requirements of changing, evolving and differing civilisations.

Note: These descriptions of religions are simplified overviews. They do not represent authoritative positions and are meant only to initiate discussion.

RESOURCE 2

WORLD RELIGIONS AND THE ENVIRONMENT

Religion: .....

Theological/Cultural Elements	Beliefs about the Environment	Implications for Sustainable Living

RESOURCE 3

DEFINING CULTURE

Source: Bell, R. and Hall, R. (1991) *Impacts: Contemporary Issues and Global Problems*, Jacaranda Press, Brisbane; and Seymour-Smith, C. (1986) *Macmillan Dictionary of Anthropology*, Macmillan Press Ltd.

Culture can be defined in a variety of ways:

Culture as Meaning

Some definitions of culture emphasise its basis in meaning. All human activity involves meaning, and this is what distinguishes it from the activity of non-human animal species. Culture, then, arises exclusively from human activity and excludes other species. Meaning presupposes language; in other words language, which is a unique characteristic of humans, at the same time characterises culture.

Culture as Human Activity

In the most general sense of the term, culture refers to all human activity. No activity is excluded, not even the most mundane activities involved in satisfying one's basic needs. Work, leisure, eating and drinking, travelling and even thinking are cultural activities. This definition is so broad that special terms have been devised to describe particular aspects or categories of culture, for example, 'popular' culture, 'counter' culture, 'dominant' culture.

Culture as Norms and Values

A more restricted definition of culture defines it as the values held by a group and the norms governing behaviour. Values are ideal standards which are held up as 'good' for members of a society to achieve, while norms are rules governing behaviour of a society. This approach to defining culture tends to have been adopted by social scientists engaged in comparing different cultures. To most analysts of culture, this approach is far too narrow to give a full account of culture.

Culture as Works of Art

A common view of culture is that it refers to works of art embodied in music, opera, ballet, painting, sculpture, literature, drama and other art forms. Culture incudes all of these, but is a much broader concept. Such works of art can only be understood in the context of the wider culture in which the artists live and work.

Culture as Leisure Activity

Sometimes culture is defined as what we do outside of our work. This is obviously quite a Western concept since 'leisure' and 'work' are blurred in many people's lives. Even western sportspeople may see their sporting activities as work.

The broadest definitions are therefore those which highlight human activity and meaning. Cultural activity is the means by which people makes sense of their world. It gives them as sense of identity.

RESOURCE 4

DEFINING RELIGION

Source: Bell, R. and Hall, R. (1991) *Impacts: Contemporary Issues and Global Problems*, Jacaranda Press, Brisbane; and *New Internationalist*, (1986, January).

Religion is also a difficult concept to define. One simple definition is that it is a 'set of personal and social beliefs which have two main characteristics: a deep concern with the ultimate meaning of human existence; and an identification with a supernatural power beyond the limits of the human and natural worlds.'

Religions generally have the following characteristics in common:

- a belief in supernatural beings, or gods;
- a code of morality believed to be sanctioned by the gods;
- a distinction between sacred and profane objects;
- ceremonial and ritual acts which focus on sacred objects and symbols;
- communication, notably prayer, with the supernatural;
- particular religious feelings, such as a sense of mystery, awe, guilt or feelings of adoration and reverence. These feelings tend to be aroused in the presence of sacred objects or symbols, and during ceremonies and rituals associated with the supernatural;
- a particular world view, or a general understanding of the world and the individual's place in the universe, that shapes their overall organisation and style of life; and
- a social group expressing the above features with which the individual identifies and contributes to.

Generally religions can be categorised into three groups:

Monotheism: the belief in one supreme being or god, e.g. Christianity, Islam, Judaism

Polytheism: the belief in more than one god, e.g. Hinduism, Shinto

Animism: traditional tribal religions which believe that divine power is held in the physical aspects of the world such as topographical features, flora and fauna, and the elements. Some African, Native American, and Polynesian groups follow animist religions.

RESOURCE 5

ACAP CASE STUDY 1

Source: Gurung, Chandra P. (1990).

The Annapurna Region of Nepal

The Kingdom of Nepal, with an area of 147,181km², is a land of ecological contrasts. Within a short span of 200km, the altitude varies from less than 100m at mean sea level to 8848m - Sagarmatha (Mt Everest), the highest peak in the world. Thus the tropical monsoon forest in the Tarai to the temperate evergreen forests in the midland region and the arid steppe of the Tibetan plateau have, no doubt, been excellent habitats for a variety of plants and animals. Furthermore, for centuries, the landscape has been carved by a large number of populations of Indo-Aryan and Mongoloid stocks with more than 45 ethnic and tribal groups. This peaceful land of unexcelled beauty and cultural heritage, generally known as 'Shangri-La', has been classified by the United Nations as one of the second least developed countries in the world. Yet with a population of 19 million and a staggering growth rate of 2.6% per annum, the environmental problems within this beautiful land have reached an alarming level.

More than 90% of the population are subsistence farmers and more than 40% live below the poverty line. These people depend on depleted forests for fuel, fodder and timber. Currently more than 87% of the entire country's energy requirement comes from fuelwood. The forest is being destroyed at a rate of nearly three percent annually. The dependence on firewood as a source of energy in the rural area is even more than 93%. This loss of forests, combined with overgrazing by livestock and cultivation of crops on marginal land, has triggered the processes of soil erosion and landslides during the monsoon season. This has caused devastating floods in the lowlands of the Tarai and India.

The ecological and cultural issues in the Annapurna Himal Region are not too different from those in other Himalayan regions - except that they are greater in magnitude. Within a short distance of about 120km, the altitude varies from less than 100m at mean sea level to 8091m - Annapurna 1, the eighth highest peak in the world. Due to its geographic features and terrain, it provides many micro-climates supporting sub-tropical lowlands and forests in the plains and the valleys and lush rhododendron and temperate evergreen forests in the south of the Annapurna, and finally alpine steppe and arid environments in the North of the Annapurna Himal. Thus it contains over 100 species of orchids and many of Nepal's 700 medicinal plants. This region serves as excellent habitats for rare and endangered species such as the snow-leopard, the musk deer, and the blue sheep. It is also the habitat of five of the six species of pheasants found in Nepal.

The Annapurna Conservation Area (ACA) encircles the major peaks of the Annapurna Himal with an area of 2600km². Catchments of three major river systems are roughly bordered by the major trekking route. Politically, it includes two zones, five districts and about 80 village phnchayats according to the previous political system. It is also home to over 40,000 inhabitants of different ethnic and tribal backgrounds with various religions such as Hinduism, Buddhism, Bon Po, Shamanism and Animism. Gurung, Magar, Thakali and Manangi are the dominant groups. Basically these people are subsistence farmers who depend on the forests for fuel, fodder and timber.

The Annapurna Conservation Area

The Annapurna region is also by far the most popular trekking destination in Nepal attracting over 36,000 overseas trekkers (over 60% of the total trekkers of Nepal) in 1989. Furthermore, an average of one porter per trekker is required in the mountains.

Due to the high population growth rate culminated by the influx of a large number of trekkers, over-grazing, intensive agriculture and poverty, the natural environment, resources and cultural integrity of this region is increasingly deteriorating. Because of these factors the social, cultural and natural environment of Nepal are in jeopardy. Rational forest management of a sustainable yield basis is non-existent.

In view of this environmental deterioration in one of the most spectacular regions of Nepal, His Majesty King Birendra Bir Bikram Shah Dev of Nepal issued directives in the spring of 1985 to investigate the possibility of giving protected status to the Annapurna region. The directive clearly required the preparation of a management plan that would help to strike a balance between the basic needs of the local inhabitants, tourism development and nature conservation. The King Mahendra Trust for Nature Conservation (KMTNC), a non-governmental, autonomous and non-profit organisation, is chaired by His Royal Highness Prince Gyanendra Bir Bikram Shah who took the initiative of the royal directives. A management plan was prepared by a team of experts and approved by the cabinet of His Majesty's Government.

The Annapurna Conservation Area Project (ACAP) is a pilot project implemented in 1986 that addresses the problem of maintaining a crucial link between economic development and environmental conservation. It recognises that protection of critical habitats and maintenance of species diversity cannot be achieved without improving the economic conditions of poor villagers who inhabit the mountains. Unlike national parks and wildlife reserves, it regards humans, and not any particular species of wild animals or plants, as the focal point of every conservation effort.

Discussion Questions:

1. What are the main environmental issues facing Nepal and the Annapurna region?
2. What is the difference between the philosophy of the establishment of the Annapurna Conservation Area and other Nepalese National Parks?
3. Why was the Annapurna region selected for the conservation programme known as ACAP?

RESOURCE 6

ACAP CASE STUDY 2

The Annapurna Conservation Area Project

'What is conservation - if not for the people? It must be viewed only as a means, the end being the improvement of the quality of our very existence.'

His Royal Highness Prince Gyanendra Bir Bikram Shah, Chair of the King Mahendra Trust for Nature Conservation

The Annapurna Conservation Area Project (ACAP) operates under the guidance of the King Mahendra Trust for Nature Conservation, Nepal's leading non-profit, non-governmental environmental organisation. It is self-sustained by entry user fees but receives additional support from the World Wide Fund for Nature (USA) and the German Alpine Club.

The project was set up in 1986 and has undertaken an innovative and successful approach to natural resource and tourism management in the Annapurna region. ACAP practices a multiple land use method of resource management, combining environmental protection with sustainable community development and tourism management. Income from tourism is used to integrate traditional subsistence activities into the framework of resource management and to develop small-scale conservation and alternative energy projects in order to raise the living standards of the local people.

ACAP has a grassroots philosophy and approach which involves local communities in all aspects of the conservation and development process. ACAP's role is that of *kami*, or 'matchmaker', between local communities and sources of appropriate skills, knowledge and technical and financial assistance which enables these communities to improve the quality of their lives.

Recognising that the breakdown of social structures contributes to environmental degradation, ACAP also strives to strengthen the cultural integrity of the area. At the heart of ACAP's programme is conservation education. ACAP believes that without increasing the level of awareness of both villagers and visitors, lasting environmental protection and cultural diversity cannot be achieved.

Objectives and Principles of ACAP

The overall goals and objectives of the project are to conserve both natural and cultural resources for the benefit of the local people of present and future generations by implementing rational management policies and programmes.

ACAP's long term objective is to benefit the 40,000 inhabitants living in the 2,600 km^2 Annapurna Conservation Area by providing a viable means to help them maintain control over their environment. ACAP bases its activities on three principles:

- **People's Participation**

In order to have long lasting efforts in conservation in the Annapurna region, it was recognised that the interests of the local people and their needs must be considered first. Unless these people really felt that fruits of conservation can be harvested by themselves and that the resources belong to them, the support of the local people cannot be obtained. Thus the project considers the local people as the main beneficiaries and includes them in the planning, decision -making and implementing processes, and delegates more responsibilities for the management of the conservation area to them. Thus various management committees (forest management committee, kerosene depot management committee, health centre management committee), selected and nominated by the local people, are formed in order to manage the various ACAP activities. Most of the community development projects undertaken by ACAP are carried out with 50% local contribution either in cash or kind. Thus the project is administered by only a few staff, most of them hired locally.

- **Catalytic Role**

His Majesty's Government of Nepal and various other national and international agencies have implemented a number of development and conservation projects in the region. It is not the aim of ACAP to duplicate or take over

these projects but to work with them in order to improve the quality of life of the people. ACAP uses grassroots methods to help the villagers maintain control over their local resources as well as help to identify their immediate needs and priorities. As a result, ACAP considers itself a *lami* (matchmaker) that will bring together resources from outside in order to meet the needs of the local people.

- **Sustainability**

One of the most important characteristics of the project is the sustainability concept. Many of the foreign aided development projects in developing countries fail because they do not have any provision for sustaining them once the donor agency leaves. These projects once completed can neither be maintained and managed by the local people nor by the government - creating a great loss of time, energy and resources. ACAP has to be financially self-reliant once the funding from WWF-USA and other donor agencies is exhausted. Hence, an entry user's fee of about US$7 is levied on all the international trekkers visiting the Annapurna region. For the first time, His Majesty's Government of Nepal has allowed ACAP to collect the fee and deposit it in its own account. Thus, there will not be any financial burden, either to KMTNC and His Majesty's Government or to the local people once funding from the donors is terminated. A similar approach is also maintained among community development projects where the local people are either trained or provisions made for the projects to continue. As an example, a community health centre in Ghandruk was founded by a Rs 300,000 Endowment Fund in which Rs 100,000 (US$3,500) and Rs 200,000 (US$7,000) were contributed by the local people.

Discussion Questions

1. What is ACAP's relationship with tourism?
2. Why is the concept of *lami* so important to ACAP?
3. Why does Prince Gyandra Bir Bakran Shah say that conservation is for the people?

RESOURCE 7

ACAP CASE STUDY 3

Personal Perspectives 1

An interview with Min Bahadur Gurung, a respected local elder from Ghandruk and Chairman of the region's Conservation and Development Committee.

Interviewer (I): You have been involved for many years in the indigenous management of your region's forests and other natural resources. Is there any influence of culture and religion?

Traditional Leader (TL): Of course. In our village we practice Hinduism, Buddhism and Animism. Our ancestors or forefathers have managed their forest resources by themselves without the help of outsiders. They set aside a forest area for fuelwood and harvested it on a rotational basis.

I: Would you think there is a negative impact on the forest when you harvest for fuelwood?

TL: When you harvest the selected old trees of a particular area, and for a certain period of time, there will be no adverse impact on the environment. Our traditional rotational system makes the forest conservation sustainable in the long run. We also feel very familiar with our forest. We know what species of trees to harvest, when, where and for how long.

I: It seems that you and your people have a close relationship with the natural environment. How do you link culture, religion and environment?

TL: Our culture and religion provide education for nature conservation. In every village we have a forest sanctuary where we worship our forest god. The forest is prohibited from any use and is thus a home for many birds, deers, insects and many other living forms. We believe that if we cut such sacred forest we will be sick. The forest's resources, especially traditional medicinal plants, are also important. We use them to treat many common diseases. Our sacred forests are set aside above our village. We feel safe from landslides and our water source is kept in good condition. It also keeps our village green thus providing a high aesthetic value. Our forests shape our lifestyles and behaviours.

I: The way you protect your forest has high ecological value. Would you believe this system to be sustainable?

TL: The way we protect and conserve our forest is for our benefit. We harvest the fruits of our conservation efforts. Since our forefathers, we have followed this culture and religion. Thus sustainable management and use of the forest resources is our way of life. We are not relying on outsiders to manage our forest and wildlife and our conservation practices don't rely on money for its success. Everyone in the village looks after their forest. Our communal management system is working. Our children are also growing into this system, so I hope they learn the way we are managing our resources. Additionally, the arrival of the Annapurna Conservation Area Project (ACAP) was a blessing for us.

I: How is ACAP working in the village?

TL: We support ACAP's integrated conservation and development programme through people's participation. It has helped us to strengthen our traditional institution with the formation of the Conservation and Development Committees. ACAP emphasizes traditional resource management practices. This has allowed us to continue our traditional systems of fuelwood collection and rotational grazing in our alpine pastures. ACAP didn't drive the local people from the villages. Other protected areas such as national parks in the Himalayas have excluded local people totally which has created conflict between parks and people. ACAP has also enabled us to implement small-scale community development projects such as drinking water supply, medical facilities, irrigation, bridges and trail construction and repair. Additionally, we also now have a forest nursery... ACAP's Conservation Education and Extension Programme helped to mobilize our people in conservation and sustainable development activities. We are confident we can sustain our lifestyle.

I: What do you think about sustainable living and how do you interrelate your development works?

TL: We believe development should not be an agent for destruction to our environment. It rather should aim to meet the basic needs of the people, for example provide food, cotton and shelter. Most importantly, we are protecting our environment. If

you have fresh air to breathe, fresh food to eat and a safe shelter in which to sleep, then you live in a sustaining society. Our lifestyles will be more sustainable if we learn to live in harmony with our environment. If we neglect the environment that is sustaining our lifestyle, then we will be destroying our future.

Personal Perspectives 2

An interview with Om Bahadur Gurung, Buddhist Monk and Lama (Priest) from the Village of Ghandruk, Nepal.

Interviewer (I): As a Buddhist monk, how does religion play a part in your daily life?

Monk (M): Culture and religion are an important part of all of our lives. We have been practising them since our childhoods. Our parents have taught us the good things and to follow the Ramro Bato (Good Path). I have inherited my culture and religion from my father. I have learnt compassion, happiness and the good things in my life. Thus we respect our culture and religion.

I: It sounds like you have learnt a great deal of good things about the Ramro Bato in your life. Could you please elaborate a bit more?

M: Well, in our society, people do all sorts of things, both good and bad. I learnt that if you do a bad thing, you will have to face a disastrous consequences, 'pap', after your death. Cleanliness is important in our religion. Our three hundred years old monastery is in the forest, away from the dirty village. We respect the forest because it is the home of our god. We protect the forest and tell other villagers to do so. The forest provides valuable medicinal herbs which are important in our lives. Our mantra (prayers) and traditional medicinal herbs save the lives of our people when they are sick. We tell people not to cut down trees and not to kill animals.

I: Oh! Why do you tell this message to others?

M: The answer is simple. Do you kill your children? I am afraid not. You love your children, don't you? All creatures have life and they are born freely in the planet earth. I believe they have the right to survive. As a human being, we should take care of all the living creatures and live in harmony with their environment without oppressing them.

I: It sounds good. How does your culture and religion reflect the notion of sustainable living?

M: All living creatures live and die. As for human beings, we believe they do not die, but change their spirit and form another life. We Lamas perform Arghau, for example, within 49 days of a person's death because that spirit will be in a hard life. We pray to our god to send them into heaven and to change their life into another living creature. That is our interpretation of sustainable living. Life is a cycle. If we don't do our karma, the cycle will be broken.

I: Finally, do you have any message to educators?

M: I have learnt many lessons from my Guru (mentor) over the years. To prove my worthiness as a Lama, I spent three years, three months and three days in a hostile place to learn the ways of the Buddhist culture and religion. When I went to the city to observe other monasteries and meet other monks, I have learnt that I still have to learn more. I hope educators have more access to learn about our culture and religion. From my experience, I would say that the Buddhist philosophy of culture and religion provides the wisdom to protect our environment and sustain our lifestyles.

Discussion Questions

1. Using knowledge from the rest of this module, discuss the sort of beliefs about the environment that the Ghandruk villagers might hold.
2. What are some of the principles of sustainable living outlined in these two accounts?

RESOURCE 8

FOLLOWING THE PRINCIPLES OF SUSTAINABLE LIVING

Principles of Sustainable Living	What ACAP Did	What I Can Do in My Community
Qualitative Development	ACAP used indicators such as health facilities, availability of drinking water, education and alternative energy as baseline data to evaluate the project. The project also focuses on community development programmes and uses 'basic needs for the people' as its mission statement.	
Adopting a Global Perspective	ACAP's staff recognise that environmental and social problems are inseparable. ACAP's philosophy is one of 'conservation for the people'. Its ecotourism project utilises expertise from around the world.	
Ensuring Efficiency	ACAP encourages the use of alternative energy such as back boilers, kerosene and gas fuels, micro-hydro electric and solar power schemes as well as improved efficient stoves for wood burning.	
Ensuring a Resilient Economy	ACAP's philosophy of people participation in change means that the changes will be self-sustaining. Fees from trekkers ensure that the project will not require a constant injection of funds from other sources.	
Ensuring an Externally Balanced Economy	ACAP focuses on education programmes for trekkers to encourage the use of local goods and services and so reduce dependence on imports.	
Community Participation	ACAP's grassroots philosophy of people participation ensures empowerment of the local people to manage their own affairs. Success is noticeable with ACAP's introduction of a drinking taps scheme which was more successful than a previous government imposed one. Local people are encouraged to bring suggestions for improvement to locally developed committees.	

Ensuring Social Equity	ACAP's Women's' Development Programme ensures that women have gained more involvement in decision-making on environmental issues. In addition, the Community Development Committees are representative of all castes.	
Ensuring Intergenerational Equity	ACAP's forest conservation and regeneration programmes with the establishment of tree nurseries mean sustainable forest resources. Education and training programmes provide skills for conservation for future generations.	
Preserving Constant Natural Capital and Sustainable Income	Forest nurseries allow local people to live off the interest of the forest. Micro-hydro electric schemes rather than large scale HEP provide a sustainable source of alternative energy. The use of trekkers' fees sustains ACAP's projects.	
Supporting an Anticipatory and Precautionary Policy Approach	The traditional committee structure and people participation ensures long term and equitable planning. ACAP's methodology of dialogue with the people ensures a slow approach to projects but with more sustainable outcomes.	
Limiting Natural Resource Use	ACAP has many programmes to focus on alternative energy and soil and water conservation. Educational programmes for trekkers reduce the use of open wood fires. ACAP has also promoted a change in traditional behaviours to reduce the use of fuelwood, e.g. smaller households and the use of warm clothes.	
Ensuring Cultural Equity	ACAP's educational programmes encourage trekkers to respect cultural practices. ACAP also manages a number of projects to restore and promote cultural heritage, e.g. Upper Mustang cultural project and the maintenance and repair of Buddhist temples. ACAP's philosophy of 'conservation for development' also encourages the revival of traditional resource management practices.	

READING 1

CULTURE AND RELIGION: A MECHANISM FOR BREAKING DOWN THE BARRIERS TO ENVIRONMENTAL EDUCATION

Culture and Environment

Local and indigenous cultures throughout history have developed traditions and practices which help them to live in harmony with the environment. They have sustainably managed natural resources for centuries and maintained the delicate balance of nature through the practice of their cultural and religious values. Cultural and religious values are essential elements in environmental education development strategies. It is important to embrace cultural and religious values since their practice has significant implications in nature conservation. Local people of Nepal see the forest as an important economic resource and highly revere certain forests as the place where the Gods and spirits live. For example, in many villages of Nepal, local people protect certain forests in the name of Gods. They believe that the Gods live in the forests and therefore do not cut down these trees for firewood and timber needs. Instead they have high regard for such forests for their cultural and spiritual identities. Therefore management of forest resources is influenced by cultural and religious parameters.

Perceptions of environments differ with culture. The physical environment is perceived through a cultural 'filter' made up of attitudes, past experiences and styles of observation. It is important at local levels to critically examine and adopt into environmental education local traditions and cultural values. In this way, environmental education can be made more meaningful and appropriate to local indigenous people.

Indigenous Resource Management

There are two major types of people in the world: 'Ecosystem People' and 'Biosphere People':

> *'Ecosystem People' (traditional people) are the members of indigenous cultures who live within a single ecosystem, or at most two or three adjacent and closely related ecosystems. Hunting-and-gathering societies that exploit only their local area, primitive fishing societies that harvest nearby reefs, and subsistence agricultural societies that till local fields would all be considered examples of traditional societies practising traditional systems of resource management. In contrast, are Dasmann's 'Biosphere People' tied in with global technological civilisation, drawing support, not from the resources of any one ecosystem, but from the entire biosphere. One look at a representative meal of the average American makes it obvious we are Biosphere People; the beef steak from Argentina, the wheat bread from Canada, and the coffee from Brazil are all elements of a way of life based on global resource exploitation* (Dasmann, 1974, cited in Klee, 1980).

This suggests that the Ecosystem People maintain their existence within their own ecosystem, while the Biosphere People invade the global ecosystems thus maintaining themselves from other people's ecosystems. Local or indigenous people (Ecosystem People) have managed their natural resources for hundreds of thousands of years in many parts of the world without collapsing their life support systems. Indigenous cultures have insights regarding living with the earth that the technocratic world has lost. Indigenous people possess an exact knowledge of their local environment.

Many small-scale cultures have evolved ways of coping masterfully with their environments - jungles, mountains and hot or cold deserts. There are several benefits of traditional conservation practices. For example, 'slash and burn cultivation' has been blamed for a number of environmental problems but this is not so when practised on a small scale.

Traditional systems of nature conservation and resource management in developing countries are tied with strongly held cultural and religious values. Resource management by strictly regulated use of sacred plants and animals, sacred groves, lakes and river pools, is an important ways of maintaining life support systems. Indigenous wisdom often has high conservation and ecological value.

India, Bhutan and Nepal have a cultural inheritance of worshipping trees, tigers and elephants. There are also familiar sayings, such as that a tree is as valuable as ten good sons, since a tree provides ten important needs of people: food, fodder, fertilisers, fibre, fuel, air, water, soil, shade and beauty. However, due to the indirect influence of foreign 'developed' visitors, traditional cultures are disappearing at an increasing rate and this decline means the loss of much useful environmental information.

Conversation skills are lost as old people die and their knowledge, usually unrecorded, is not transmitted to

younger generations. Cultural conservation could be a strategy for environmental education which safeguards people's identity with sound environmental practice.

The significance of cultural values cannot be overemphasised because cultures are:

> *...the 'librarians' of vast stores of knowledge, accumulated over centuries, about the potential and actual usefulness to human welfare of resources unique to their own environment: natural sources of food, medicine, textiles, dyes, pesticides and much besides that has not yet a category in conventional wisdom* (IUCN, 1983, pp 97-98).

Indigenous Knowledge: A Mechanism for Breaking Down the Barriers to Environmental Education

The emphasis for indigenous people should be on participation in determining appropriate patterns of development. The plight of poor people in developing countries (as with poor people everywhere) has been compounded by two major factors:

- *Lack of genuine power to shape their own lives: Power has not been granted to the poor or encouraged in them by ruling groups, who cite their backwardness and ignorance as reasons why they cannot be trusted to make intelligent decisions about the issues affecting their lives*
- *Lack of a sophisticated community awareness of both the potentials and the hazards inherent in the various proposals for economic and environmental development* (Howard 1983, p. 42).

Local people are usually very much aware of the costs and impacts of environmental degradation but unfortunately their knowledge is often overlooked. One of the barriers for teachers is a lack of environmental information in both formal and informal education. As discussed in an earlier section, cultural and religious values contain valuable indigenous knowledge and conservation skills. Such knowledge and skills can be a mechanism for breaking down some of the barriers to environmental education. Use of indigenous ideas and local knowledge can be very effective for environmental education.

Conclusion

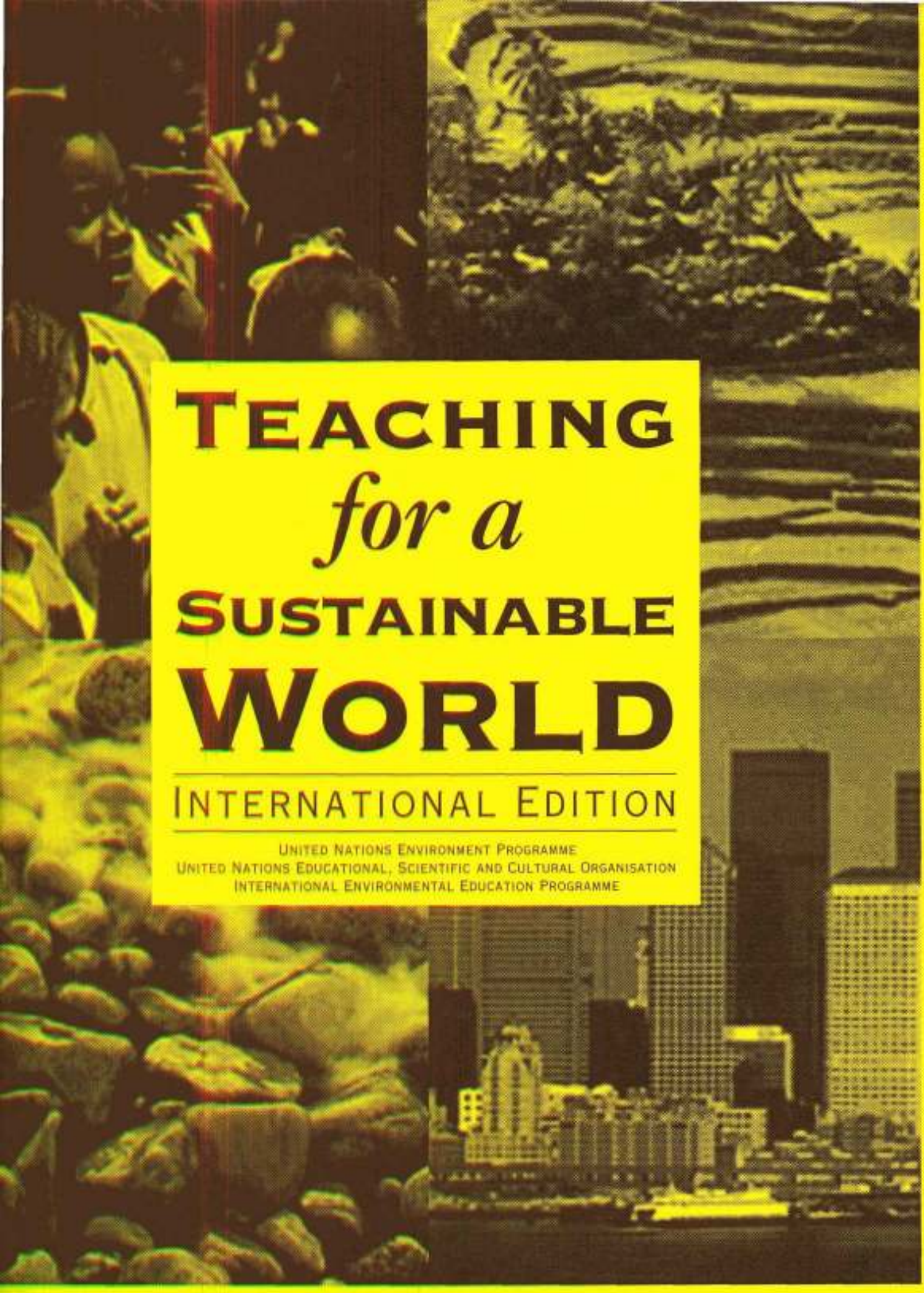
Cultural and religious values have significant implications in the implementation of successful environmental education programmes. Use of indigenous knowledge for environmental education is vital in order to revive the cultural diversity and promote ecological integrity. This will strengthen the indigenous traditional values and can be a mechanism for breaking down some of the barriers to successful implementation of environmental education.

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MODULE 9

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID
AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT
AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC
GRIFFITH UNIVERSITY

EXPLORING ENVIRONMENTAL BELIEFS

TONY HEPWORTH
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AUSTRALIA

INTRODUCTION

The workshop introduces participants to two social paradigms. One is the 'Dominant Western World View' and the other is the 'New Ecological Paradigm'. Initially, participants will examine *only* the Dominant Western World View and, in doing so, will begin to explore its weaknesses. Two stories involving puppet animals (who know more about the environment than humans do) invite participants to write an opposing set of views to the Dominant Western World View. In doing so they will be engaging in their own critical analysis of the paradigm that has guided western society for over two hundred years. The effects of this paradigm have been felt in other parts of the globe, wherever western capital has been active. This critical analysis will lead to participants writing their own version of a New Ecological Paradigm.

The approach used in this workshop is consistent with the theory of discovery learning. The workshop encourages participants to be critical of one paradigm in such a way that they begin to develop *their own*, alternative paradigm. Only when they have developed this alternative for themselves, will the actual wording of the New Ecological Paradigm be presented to them for analysis and judgement.

Much of the workshop is based on two stories to be read to the class. The facilitator should rehearse these stories for maximum dramatic effect prior to their presentation. Alternatively, the facilitator could ask a group of participants to rehearse and present each story.

OUTCOMES

Through this workshop, participants will:

- understand that the western world view of the environment has been locked in place for some time now, but that a new way of looking at the environment is slowly emerging;
- understand that unless humankind adopts this new paradigm, major structural damage will be done to the global environment;

- appreciate that change has to begin with each of us, and to accept that each of us has a responsibility to make the new ecological paradigm a reality; and
- practise a range of skills, from listening and interpreting, through identifying, role playing, debating, analysing, applying and generalising, to critical analysis, discovery, involvement and action.

WORKSHOP OUTLINE

There are four parts to this workshop.

1. Focusing Activity - 'Where Do I Stand?'

Participants use a worksheet to acknowledge and justify their own positions on four statements with a rating of 1 (True) to 10 (False). Participants use this worksheet to review their positions at different points in the workshop.

2. A Mini-lecture on 'Current Thinking on The Environment'

This mini-lecture introduces a series of themes which are developed in the workshop.

3. Two Stories

Two stories based upon the animal puppets, Riika the hippo and Pablo the parrot, are used to encourage participants to reflect on the environmental consequences of the Dominant Western World View.

4. Debriefing

A debriefing activity allows participants to develop statements about a new ecological world view and to reflect on their degree of commitment to it.

MATERIALS REQUIRED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Quotations

OHT 2: Dominant Western World View - New Ecological Paradigm.

RESOURCES

Resource 1: Where Do I Stand?

Resource 2: Riika: The Environmental Refugee

Resource 3: Pablo: The Clever Parrot

Resource 4: Forest News

READING

Reading 1: Current Thinking on the Environment.

ADDITIONAL READING

Catton, W.R. and Dunlap, R.E. (1980) A New Ecological Paradigm for a Post-Exurberant Society, *American Behavioural Scientist* , 24, 15-27.

Gersie, A. (1992) *Earthtales: Storytelling in Times of Change*, Green Print, London.

Livo, N.J. and Rietz, S.A. (1986) *Storytelling: Process and Practice*, Libraries Unlimited Inc., Colorado.

Milbrath, L.W. (1989) *Envisioning a Sustainable Society*, State University of New York Press, Albany.

Perlmutter, H.V. and Trist, E. (1986) Paradigms for Societal Transition, *Human Relations*, 39(1), 1-27.

1. Focusing Activity: Where Do I Stand?

- Ask participants to examine the 'Where Do I Stand' worksheet on Resource 1, and use the ordinal '1st' to mark where they (as individuals) stand on each of the four TRUE/FALSE continua.
- In groups of 3-4 participants discuss their answers and the reasons for them.
- After the discussion, invite participants to shift their '1st' to the left or the right if they wish.

2. Mini-lecture: Current Thinking on the Environment

A. Mini-lecture

Facilitator Reading 1 provides the text of a mini-lecture about current thinking on the environment. It is organised around themes:

- Recent publications and their warnings
- Science and technology versus attitudes
- New ways of looking a the world
- Problems and solutions

Facilitators will be able to develop their own version of this mini-lecture by preparing their own OHTs and offering other examples and relevant audiovisual support.

B. Tasks on the Mini-lecture

- Divide participants into groups of 3-4. Allocate each group one quotation from OHT 1. These are from the mini-lecture. Each group discusses its quotation, addressing the following questions:
  - Do you agree with it? Why?
  - Do you wish to challenge it? Why?
  - Do you need to seek some answers that will help you understand the quotation? Which?
- Groups present their conclusions, or uncertainties, in no more than one minute per group.
- Allow several minutes for whole group discussion on the mini-lecture and points raised in the group reports.
- Invite participants to return to the 'Where Do I Stand?' (Resource 1) to review their positions and mark any change, to the left or right, with the ordinal '2nd'.

3. Story 1: Riika: The Environmental Refugee

Explain that the rest of the workshop is based upon two stories and that the animal puppets in these stories take the view that humans are rather silly creatures. Humans, according to these puppets, have a large blind spot when it comes to the environment. They believe we have been so busy producing so that we can consume, that we have not stopped to count the costs. Now, all the costs are beginning to mount, virtually simultaneously, and we say 'Isn't it terrible', but like the old joke about the weather, do nothing about it. The puppets care for their human friends, but that does not mean they do not grow impatient at our uncertainty, nor does it mean they cannot express their anger at what we are doing to their natural homes.

Resource 2 is the text of the first story. As indicated in the introduction, the story should be prepared for presentation to the group as a dramatic reading.

Tasks on Story 1

- In groups, participants prepare four sketches.

  Group 1: A 'before' mural, showing what the 39th waterhole might have looked like before all the changes took place.

  Group 2: A 'causes' mural, showing all the things that caused the changes, e.g. tractors ploughing the land, graders constructing roads, crops being sprayed.

  Group 3: An 'after' mural, showing what the 39th waterhole might have looked like after these changes had taken place.

  Group 4: Another 'after' mural showing the changes that had taken place for humans, e.g. fields of coffee trees, roads, bridges and dams, cities and factories.

- Ask participants to display their murals.
- Ask participants to write 3-4 sentences, *from Riika's perspective*, explaining what 'environmental refugee' means and how Riika got to be an environmental refugee.
- Ask participants to write 3-4 sentences, *from a developer's perspective*, explaining that humans do take precedence over animals.
- In the story Riika says, 'Someone has to accept the blame'. Debate this viewpoint. Half of the group take Riika's side and blame humans for all the changes. The other half can be against Riika and argue that humans need to change the environment so that life becomes better.
- Invite participants to return to the 'Where Do I Stand?' worksheet (Resource 1) and to mark with an 'R' on each continuum where they think Riika would place her mark. Then they mark with the ordinal '3rd' where they personally stand now.

4. Story 2: Pablo: The Clever Parrot

Story 2 is presented in Resource 3

Present this story in the same dramatic way as the first story.

Tasks on Story 2

- Ask the group if they think that Pablo understands that a forest is a system? Ask for reasons and, in doing so, ensure that the group understands:
  - what a system is;
  - how a forest is, or why it is not, a system; and
  - how important are forests to humankind.

Alternatively, use the information in Resource 4 as a basis for group discussion of these points.

- Divide participants into small groups to consider the following:

  (a) Pablo is convinced that humans are 'so silly'. What are his reasons for thinking this way? Can you conceive of a time when the predictions in Stephanie's dream might come true or are they just too silly to even contemplate?

(b) Draw up a list of arguments *for* and arguments *against* the parrot's plan. Cartoons may be used to illustrate some of these arguments.

- Hear and discuss group reports.
- Divide participants into three groups. Group 1 is comprised of those prepared to support the parrot's plan. Group 2 is comprised of those against the plan. Group 3 is in-the-middle-people who are still uncertain one way or another. Debate the merits, or foolishness, of the plan. Those in the 'for' group have to take on the role of Pablo. As the debate proceeds individuals physically walk from one group to another as they change their views, e.g., from the 'support' group to the 'uncertain' group, from the 'against' group to the 'support' group. At the end of, say 10 minutes, the debate concludes and numbers in each group can be counted to determine majority opinion.
- Invite participants to return to the 'Where Do I Stand?' worksheet (Resource 1) and to mark with a 'P' on each continuum where they think Pablo would place his mark. Then they mark with the ordinal '4th' where they personally stand now.

5. Debriefing: The New Ecological Paradigm

A. This activity gives participants the opportunity to develop a set of beliefs for a new ecological paradigm based upon their discussions in the workshop. Resource 1 is used.

- Ask the group to write a completely opposing point of view to each of the four statements on the worksheet. Write those four points of view next to the '10's on the worksheet.
- Group pairs into groups of 4-6 to refine the new statements.
- Ask participants to discuss:
  - How close are you to accepting these new points of view?
  - How close is society to accepting these new points of view?
- Present OHT 2 which contains one version of a new set of statements. This could be photocopied for distribution. Does the group agree with the statements under the New Ecological Paradigm? Are there any they would like to change?

B. Review some of the main points from the mini-lecture. Ask the group, for the moment, to presume that Brown and the Bruntland report 'got it right'. Discuss the following:

- Where, on the continua, *should* society place itself?
- What are the implications for the future of holding such a position?

C. Invite participants to individually locate themselves on the continua and to consider what the implications are for their future of holding such a position.

- Invite participants to work in pairs to write three ways in which their life might change, because of the stands they have taken. Share these ways with others.

D. Review the changes in points of view participants have experienced on the various continua in Resource 1 during the workshop.

OHT'S

OHT 1

QUOTATIONS

To keep options open for future generations, the present generation must begin now, and begin together, nationally and internationally.

Some damage is clearly inevitable. Some depredation is tolerable.

Past human actions have left contemporary societies with an almost insuperable set of problems to solve.

The solution lies in our attitudes towards the earth and how these attitudes direct our actions.

In short nature was devalued. This was our generation's hidden curriculum.

'Everything', the environmentalists tell us, 'must go somewhere'.

The answer that is being heard, albeit in something of a whisper, is 'We all do'.

A world in which countries go their own way may not be worth living in.

Humans are part of the web of nature, with no part being any more or less important than any other part.

While the solutions are simple, they are not easy.

We are closing down the major life systems of this planet.

OHT 2

DOMINANT WESTERN WORLD VIEW **NEW ECOLOGICAL PARADIGM**

Assumptions About the Nature of Humans

People are fundamentally different from all other creatures on earth, over which they have dominion.

While humans have exceptional characteristics (culture, technology, etc), they remain one among many species that are interdependently involved in the global ecosystem.

1.....2.....3.....4.....5.....6.....7.....8.....9.....10

Assumptions About Social Causation

People are masters of their destiny; they can choose their goals and learn to do whatever is necessary to achieve them.

Human affairs are influenced not only by social and cultural factors, but also by intricate linkages of cause and effect feedback in the web of nature; thus human actions may have unintended consequences.

1.....2.....3.....4.....5.....6.....7.....8.....9.....10

Assumptions About the Context of Human Society

The world is vast and thus provides unlimited opportunities for humans.

Humans live in and are dependent upon a finite biophysical environment which imposes potent physical and biological restraints on human affairs.

1.....2.....3.....4.....5.....6.....7.....8.....9.....10

Assumptions About the Constraints on Human Society

The history of humanity is one of progress; for every problem there is a solution and thus progress need never cease.

Although the inventiveness of humans and their powers derived therefrom may seem to continually extend our limits, ecological laws cannot be ignored, nor will they go away.

1.....2.....3.....4.....5.....6.....7.....8.....9.....10



RESOURCE 1

WHERE DO I STAND?

People are fundamentally different from all other creatures on earth, over which they have dominion

1...2...3...4...5...6...7...8....9...10

True False

People are masters of their destiny; they can choose their goals and learn to do whatever is necessary to achieve them.

1...2...3...4...5...6...7...8...9...10

True False

The world is vast and thus provides unlimited opportunities for humans.

1...2...3...4...5...6...7...8...9...10

True False

The history of humanity is one of progress; for every problem there is a solution and thus progress need never cease.

1...2...3...4...5...6...7...8...9...10

True False

RESOURCE 2

RIIKA: THE ENVIRONMENTAL REFUGEE*

It was quite accidental really, but just as Stephanie Jones was walking by the table she happened to glance down at the newspaper. It was open at the Wanted page and her eyes fastened on a particular advertisement.

> Wanted: Friendly homes for friendly hippos
>
> Apply: HERM, 39th Waterhole, Malagarisi River, Tanzania.

Stephanie knew it had to be a joke, but she thought she would send a letter anyway ... just for the fun of it ... to the 39th Waterhole ... to see what might happen ... who knows?

That night at tea time she asked her parents if she could have a hippo from Africa for a pet. Her father said, 'Of course, but you will have to arrange to get the hippo all the way from Africa to our front doorstep', and winked at Stephanie's mother. Stephanie's mother just smiled.

That night as Stephanie sat at her desk writing the letter to the 39th waterhole her father poked his head around the door and asked 'Homework?'

She replied 'No, I'm writing to Africa for my hippo.'

'Get me one too.'

'Daddy, don't you think two hippos will be too many!'

'Yes, you are probably right,' he said, and walked off. A minute later Stephanie could hear her parents laughing, and she felt a little stupid. 'But,' she thought, 'who knows?' and then, 'I can't believe I'm doing this.' But she finished the letter all the same. Then she added:

> P.S. My parents say its OK.
>
> P.P.S. Please send a hippo who speaks English.

The next morning Stephanie walked to the post office to airmail the letter. As she paid for her stamp she made sure the postal officer could not see the address on the envelope. She had to admit that she felt a little silly but she posted the letter, because Stephanie listened to a small voice inside her that whispered, 'Take a chance.'

One week went by and Stephanie thought, 'Wasn't I stupid sending that letter.' Two weeks went by and Stephanie thought, 'Wasn't I really stupid sending that letter.' Three weeks went by and Stephanie knew just how stupendously stupid she had been. Four weeks went by and her father asked in his 'Ha. Ha. Ha.' voice, 'When is that hippo coming Steph?' Stephanie pulled a face but before she could answer the doorbell rang.

They heard Mrs Jones go to the door, heard it open, heard a warm, friendly voice say, 'Hullo, my name is Riika, I speak English', and then there was a silence. A voice inside Stephanie shouted, 'See! I told you to take a chance didn't I!' She beamed at her father, 'The hippo is at the front doorstep now Daddy.' Her father looked a little confused.

A few seconds later when a pale-faced Mrs Jones walked into the loungeroom followed by a hippopotamus, he looked very confused. Stephanie walked straight up to Riika, gave her a hug and said, 'I'm Stephanie, I wrote the letter to the 39th waterhole.'

'Its nice to meet you,' said Riika.

'The hippo can't possibly stay,' said Mr Jones in a weak voice.

'But you invited me,' said Riika, politely but firmly.

'We didn't mean it,' said Mrs Jones, still looking very pale.

'I have your letter inviting me,' said Riika quietly.

'You will have to go back,' said Mr Jones in a voice he didn't recognise.

'They only gave me a one way ticket,' said Riika.

'We'll get you a return ticket,' said Mrs Jones, near to panic.

'Who are 'they'?' asked Mr Jones. This time he thought he spoke in something like his own voice.

'HERM,' answered Riika'.

Neither Mr nor Mrs Jones knew what Riika was talking about and she knew she had to explain things. 'HERM' is the Hippo Environmental Refugee Movement, and while

* The human characters in this story, Stephanie, Mr Jones and Mrs Jones, give it a western flavour that may not be appropriate in a non-western country. Facilitators should feel free to alter those names to give the story more of a local flavour.

it is very nice of you to offer to buy me a return ticket, it just wouldn't help. I'm an environmental refugee. I can't go back.'

'Huh?' said Stephanie's parents.

Riika went on. 'I'm running away from an environment that has been changed so much that it has been destroyed for hippos. Hippos can no longer live at the 39th waterhole in the same way that people can no longer live at Chernobyl.'

'That's silly,' said Mr Jones, 'you don't live at Chernobyl.'

Riika sighed, and wondered why humans never seemed to understand. 'Some of them,' she thought, 'are as thick as the pollution they create.' 'Let me explain a little more,' she said. 'Everything at the 39th waterhole, and in many other waterholes, has changed. I'm running away from an environment that has been changed so much that it has been destroyed for hippos. We can't live there any more and we have to leave, just like the people who have had to leave Chernobyl. Nothing is the same in our home, everything has changed, for we have experienced 'progress'.'

Riika paused for a breath and then continued. 'Bush tracks have given way to roads and highways. Villages have been dammed. Forests have been cleared and the land ploughed and planted and sprayed. Our home, which was once big and beautiful and clean is now small and ugly and yukky. The air smells of factory smoke and diesel fumes, the soil grows crops like coffee which we can't eat and the water tastes of chemicals. The fish no longer swim, the butterflies no longer drink the flowers' nectar, the birds no longer sing. We had to move.'

'We are very sorry for all that,' said Mr Jones, 'but you can't blame us, and you can't stay here.'

'Someone has to accept the blame,' said Riika. 'Tell me, do you drink coffee from Tanzania?' asked Riika.

'Sometimes,' said Mrs Jones.

'Do you eat cashew nuts from my country?'

'We had some last Christmas. They were delicious,' said Mr Jones.

'Is your shirt made from cotton from my country.'

'I think it is,' said Mr Jones.

'Then maybe you are to blame,' said Riika. She went on. 'Does your country send tractors and ploughs to Africa? Does it send trucks and graders?' There was a hint of anger in Riika's voice.

'Its hard to know. I suppose so. Maybe.'

'Then maybe all of you helped destroy my home.'

'Maybe we did,' said Stephanie, who seemed to understand much better than her parents.

'But Riika,' argued Mrs Jones, 'when we do all those things, we do help the people of Tanzania.'

'You do help the people,' said Riika, 'but you don't help the animals. Humans are only one of the species that live on this planet, but because you don't think about us, I'm an environmental refugee.'

'Then maybe you had better stay with us after all,' said Mr and Mrs Jones. 'At least until we can find out what to do with you,' Mr. Jones added under his breath.

'Thank you, Mum, thank you, Dad,' said Stephanie. 'Riika can come upstairs and live with all my puppets.'

Mr Jones looked hard at Stephanie, 'What is wrong with the shed?' he wanted to know.

Mrs Jones said, 'Shoosh. Don't be silly.'

That night the friendly hippo, who could speak English, slept in Stephanie's room. Riika actually slept at the head of the bed and Stephanie used her as a pillow. And in the darkened room, you couldn't tell Riika from all the other puppets Stephanie had collected over the years. As she drifted off to sleep Stephanie murmured, 'I have a hippo for a pet ... no, for a friend ... and a hippo for a pillow. Riika is my hippo-pillow.'

RESOURCE 3

PABLO: THE CLEVER PARROT*

Once, not that long ago, the world had large forests with lots of trees. But then things began to change. Steel axes took the place of stone axes and more trees were cut down than ever before. Then a German man called Stihl invented the chainsaw. The chainsaw was a wonderful invention if you were a logger. If you were a forest, the invention of the chainsaw was a disaster.

Some countries such as Brazil, Indonesia, Papua New Guinea and the Solomon Islands needed to buy goods from overseas to help their people. They bought food, medicine, machinery, computers, oil, weapons and trucks. To help pay for these goods they cut down their forests and sold the trees.

And nobody worried too much. The trees they cut were being used for their needs.

But as more and more trees were cut, and the large forests began to shrink, some people did begin to worry. These people pointed out how important trees were to us. To start with, many trees are beautiful. Some are two or three hundred years old - quite old monuments really. Trees are also wonderful to play in, to picnic beside and to just lie under and dream.

More importantly, trees hold down the soil and stop it from being blown away by wind or washed away by rain. They also provide food, homes and resting places for many animals.

Most importantly, the trees give us the oxygen that we breathe. Without trees, we could not breathe.

Stephanie Jones learnt all this at school. She also learnt that every year more and more trees were being cut down, because more and more people needed food, medicine, machinery, computers, oil, weapons, trucks, houses and paper. And Stephanie began to worry.

In newspapers and on TV there was more news than ever before about the destruction of forests. In classes all over the world teachers started teaching about the environment. Governments started to say how worried they were, but nobody did anything. They all just talked.

One night Stephanie had a nightmare. She dreamed that the world had cut so many trees down that there was a shortage of oxygen.

In the shops people queued to buy tins of fresh air.

Some carried their own supply of fresh air about with them, no matter where they went.

Because there was less oxygen for us to breathe, runners didn't want to race any more ... footballers refused to chase the ball ... swimmers had only floating competitions ... and children stopped running at parties and enjoying themselves. Instead they sat still and got bored.

The governments of the world got worried. Life wasn't very exciting any more. As people didn't exercise, but still ate the same amount of food - everybody got fat. While the tennis courts and football fields and running tracks were empty - the hospitals were very full.

As more and more trees were cut down, more and more terrible things happened.

The soil was washed away by rain and blown away by the wind ... and farmers found it hard to grow food.

Some dust storms choked people ... and made breathing very difficult.

Some muddy river waters choked coral reefs ... and tourists couldn't see anything while fisherman couldn't catch anything but dead fish.

And because trees can stop floods, and there were less trees, there were more floods ... and people drowned and homes got washed away.

Everybody, including the animals suffered. The world became full of environmental refugees.

Stephanie as usual was sleeping on Riika, her hippo-pillow, and her nightmare was so bad that her moaning and turning woke Riika. In fact it woke all the puppets in Stephanie's room and they began to complain. (Most puppets are like humans - they hate being woken in the middle of the night.)

* The human characters in this story, Stephanie, Mr Jones and Mrs Jones, give it a western flavour that may not be appropriate in a non-western country. Facilitators should feel free to alter those names to give the story more of a local flavour.

'Stephanie,' said Riika in her gentle voice, 'wake up and tell me what the problem is.' But while Riika was gentle some of the puppets gave Stephanie a bad time. They told her to 'Be quiet!' and to 'Shut up' and said other things that puppets really should not say. Only the wombat, the owl and the possum, being night time animals, were enjoying themselves.

Stephanie did her best to quiet them and told Riika about her dream. When she had finished, Pablo, a puppet rainforest parrot, asked in an I-know-something-that-you-don't-know voice, 'Why are those terrible things happening Stephanie?'

'Because the people are cutting down the trees,' said Stephanie. 'Didn't I explain that?' Stephanie asked herself.

'But,' said this cheeky parrot, 'Why?'

'Because they need to sell the trees to make money,' said Stephanie. 'I know I explained that,' Stephanie murmured to herself, 'I wish Pablo had listened.'

'But,' said this rude parrot, 'Why?'

'Because they need the money to pay for all the food, medicine, machinery, computers, oil, weapons, trucks, houses and paper that they need,' it was told, a little impatiently. Then Stephanie added, 'Didn't you hear anything I said?' Stephanie was beginning to think that this was one puppet that could be sent to the back of the cupboard for a week.

'But,' said this impertinent parrot, 'Why?'

'Because they have no other way to get their money to pay for these things,' Pablo was told very impatiently.

'Yes they have,' said the puppet parrot, in a quiet, but knowing way. 'Oh, yes they have.' Stephanie just hated the tone of voice that Pablo was using.

'You don't even go to school,' shouted Stephanie, 'so how would you know!' and began to think maybe two weeks in the back of the cupboard was a good idea. But Pablo did know. Stephanie was forgetting that parrots are experts on trees. They spend all their lives in trees, but more than that, they do get a bird's eye view of the role that trees play in the environment.

'All they have to do,' said the puppet parrot with a smile on his face, 'is to pay the people to not cut down the trees and to pay them to plant more trees. So instead of buying timber, you would really be buying oxygen, soil, coral reefs and lives.' And Pablo thought to himself, 'Why are humans so silly?'

The next day Stephanie told the teacher what Pablo had said. The teacher was impressed and told the principal. The principal became excited and told the government. The government faxed the idea to the United Nations and the United Nations went to work.

The bulldozers stopped and birds made nests in them. The chainsaws stopped and got covered by cobwebs. The timbercutters were all given shovels and young trees to plant. The soil no longer blew away or got washed away, and coral reefs grew again. There were less floods and so lives were saved.

And the United Nations were so impressed with the parrot's idea, that ever since Pablo has had a special seat on the Environmental Council of the United Nations.

RESOURCE 4

FOREST NEWS

WHAT TROPICAL FORESTS GIVE US

A Source of Much Life

Tropical forests cover only 7 per cent of the world's land area but contain between 50 to 90 percent of all our plant and animal species. The reason the figure is so vague, i.e. 50-90, is that so far we have not been able to spend as long as is needed in studying forests.

Homes for Tribal People

Many hundreds of thousands of tribal people live in rainforests. The forest homes provide food and shelter, and if the forest goes then the whole lifestyle of these people also disappears.

Foods

Tropical forests provide a wonderful variety of foods for the world. Many of these foods are favourites of ours. Bananas, mangoes, pineapples, tea, rice, coffee, corn, peanuts, brazil nuts, cashews and oranges all were first found growing in the tropical forests.

Wild Plants

Many rainforests plants have been taken from the forests and are now found on farms and plantations, e.g. rice, pineapples, bananas, tea. However, sometimes these crops are attacked by diseases and pests. When this happens biologists have to go back to the forests to find wild varieties that may be able to resist these diseases and pests.

Medicines

Tribal people living in forests have what we call 'bush medicine'. These medicines are leaves, seeds, flowers, oils and so on that cure illness, provide poisons for arrows and spears and even drugs to get high on. Many of our modern medicines come from these 'bush medicines'. Over 2000 rainforest plants contain anti-cancer properties.

A Cooler Earth

Carbon dioxide is one of the well known 'greenhouse gases' that is heating up our earth. As trees grow they are able to pull carbon dioxide out of the air and use the carbon for their own growth. The more trees then, the less carbon dioxide and the cooler the earth.

DESTRUCTION OF THE FORESTS

In 1987 an area about the size of Austria - 8,000,000 hectares was cut, allowed to dry and then burned in the Amazon rainforest. It was cleared for two reasons. Firstly, so that the local people could have small plots of land to farm. Secondly, so large cattle ranches could be started to provide beef to the hamburger market in North America.

When one hectare of land is under tropical forest it supports about 800,000 kilograms of plants and animals. When it is covered with grass and given over to beef cattle it produces about 200 kilograms of meat per year. This is enough meat to make 1,600 hamburgers.

Tropical forests across the world are being destroyed at a rate of 20,000,000 hectares per year. This is an area roughly equal in size to two football fields of forest being cut down every minute.

READING 1

CURRENT THINKING ON THE ENVIRONMENT

Recent Publications and Their Warnings

Recent key publications on our environment have pointed to the need for change in our lifestyles. Lester Brown (1989) in an article in *Habitat Australia* argued:

> *Unless the threat of climate change, ozone depletion, soil erosion, deforestation and population growth are bought under control soon, economic decline is inevitable.*
>
> *Time is not on our side ... We have years, not decades to turn the situation around. There is no guarantee that we will be able to reverse the trends ... but if we do it will be during the nineties. Beyond that will be too late.*

The Brundtland Commission began *Our Common Future* with:

> *Over the course of this century, the relationship between the human world and the planet that sustains it has undergone a profound change. When the century began, neither human numbers nor technology had the power to radically alter planetary systems. As the century closes, not only do vastly increased human numbers and their activities have that power, but major, unintended changes are occurring in the atmosphere, in soils, in waters, among plants and animals, and in the relationships among all of these. The rate of change is outstripping the ability of scientific disciplines and our current capabilities to assess and advise. It is frustrating the attempts of political and economic institutions, which evolved in a different, more fragmented world, to adapt and cope. It deeply worries many people who are seeking ways to place those concerns on the political agendas. We have been careful to base our recommendations on the realities of present institutions, on what can and must be accomplished today. But to keep options open for future generations, the present generation must begin now, and begin together, nationally and internationally.* (World Commission on Environment and Development, 1987)

In *A Green History of the World* Clive Ponting (1991) is not quite so alarmist. He concludes:

> *The problem of all human societies has been to find a means of extracting from the environment their food, clothing, shelter and other goods in a way that does not render it incapable of supporting them. Some damage is clearly inevitable. Some depredation is tolerable. .... In this wider perspective it is clearly far too soon to judge whether modern industrialised societies, with their very high rates of energy and resource consumption and high pollution levels, and the rapidly rising population in the rest of the world are ecologically sustainable.*

However, Ponting's final sentence indicates that despite his measured objectivity, he is after all, alarmed:

> *Past human actions have left contemporary societies with an almost insuperable set of problems to solve.*

Whether we adopt Brown's ten years or the Brundtland Commission's plea to 'begin now', or Ponting's more measured response, the fact remains that we face major problems and that it would be unwise to adopt a 'wait and see' approach. If the children we are teaching today, do not become part of the solutions that are needed, then by the time they are thirty, they may rightly, have lost faith in our generation, the one that nurtured and educated them.

Science and Technology versus Attitudes

We have, at our scientific and technological fingertips, the ability to make significant changes to our environment. But it is wrong to presume that the solution to environmental problems lies in our science and technology. The solution lies in our attitudes towards the earth and how these attitudes direct our actions.

Sean McDonagh (1986) makes a convincing point when he claims that 'the more sophisticated technology becomes, the more it tends to place humans outside the community of the natural world, so that we feel no real affinity for the Earth.'

In the last 200 or so years of our history the influence of such great minds as Rene Descartes, Francis Bacon and Issac Newton has shaped our thinking. We grew up in a society which 'knew' that nature could be quantified by mathematics (Descartes), that the scientific method would unlock, with unerring accuracy, all of nature's mysteries (Bacon) and that humankind was at the top of the pyramid of life (Newton). The earth was ours to command, and our science and technology would help us do just that. The beauty and wonder of nature was to be objectified and demystified. In short nature was devalued. This was our generation's hidden curriculum.

We believe now that these assumptions that guided our thinking, all too often quite unconsciously, are highly problematic. A new view of the world is developing and it is this view that will guide our thinking over the next few decades.

New Ways of Looking at the World

Firstly, it is now accepted that we live in a closed system and that when we do something to the earth at Point A and Time X its effects will be felt at Point B and Time Y. 'Everything,' the environmentalists tell us, 'must go somewhere.' An excellent but distressing illustration of this truth is the fact that in the 1960s DDT in sprays used for killing insects, especially mosquitos, eventually worked its way through the food chain and finished up in the milk of nursing mothers and was fed to the newborn.

More recently the Australian findings against Agent Orange used in Vietnam and the fallout in Europe from the Chernobyl nuclear reactor in the Soviet Union have provided further proof of this statement.

The acid rain in Venice that originates in the nations to the northwest of Italy, the pollution in the harbour of Rotterdam that is brought by the Rhine River as it flows through the countries to the east of Holland, and the salt problem in Australia's Murray River as it flows through farmlands and is joined by the Murrumbidgee, the Darling and a host of smaller rivers, further illustrate that 'Everything must go somewhere'. They also illustrate another favourite saying of environmentalists, 'There is no such thing as a free lunch' - sooner or later, someone, somewhere, has to pay for our actions at Point A and Time X.

Secondly, we are becoming aware that pollutants, e.g. oil slicks, pesticides, acid raid, radioactive air, do not carry passports and do not respect national boundaries. Questions are being asked in terms of who owns the seas? the rivers? the air? that carry these pollutants. The answer that is being heard, albeit in something of a whisper, is 'We all do'. In the same way, as the cutting down of forests continues some are asking 'Who owns the forests?' and the answer is the same, 'We all do.' This is why *Our Common Future* argues that we must 'begin together, nationally and internationally'.

Lester Brown (1989) makes reference to 'the global commons' while *Our Common Future* (1987) uses the term 'the international commons'. Such expressions herald a new way of perceiving the political divisions of the world. Nation states still exist, but the rivers that flow through them, the forests that straddle their boundaries, the seas that wash their shores and the air that flows over them belong, we are told by the whisper, not to those nation states but to all of us - irrespective of who we are and where we live on the earth. And irrespective of whether we are among the living or the greatest silent majority of all, the yet unborn.

Thirdly, there is a growing acknowledgment that we shall have to strike what Kenneth Piddington (1989) calls a 'global bargain'. For Piddington, nations would have to negotiate their responsibilities for the environment, each nation having due regard for the needs of its own people as well as for the needs of all the people of the globe. As there are 160 odd sovereign nations on our globe it is clear that arriving at a global bargain will be a long, hard road. However, we can no longer afford the luxury of letting nation states be totally independent in their actions. Lester Brown (1989) makes a telling point when he suggests 'a world in which countries go their own way may not be worth living in'.

One major factor that will make a global bargain difficult to arrive at is the vast differences in wealth and standards of living that separate nations. In the US for example, there are 1.8 persons per motor car. In Oceania there are 2.8 persons per car. In China there are 1,374 persons per motor car. While it would be damaging to the environment if 1.2 billion Chinese had the same ratio of people to motor cars that the US has reached, it would be inappropriate for us in the developed world to advise the Chinese to halt their economic growth before they came anywhere near our level. Such advice would only be seen as unwelcome.

The island nation of Madagascar has a unique set of biological treasures in its forests. But Madagascar is a poor country and suffers from the pressures of a growing population. As a consequence these biological treasures are being cleared so that more farmland is available for the people. One special plant found in the forests of Madagascar, the rosy periwinkle, holds promise for finding a cure for some forms of leukemia. Yet the rosy periwinkle is being cleared along with the forest. What kind of global bargain could we strike with Madagascar?

The Global 2000 Report to the President (1982) claims that by the year 2000 we will have forced 500,000 plants and animals to extinction. Thomas Berry (1988) in *The Dream of the Earth* claims the figure will be between 500,000 and 1,000,000. One can only wonder how many of these plants and animals might be like the rosy periwinkle and have properties that we desperately need.

Clearly, a global bargain is necessary. It will not be arrived at easily, but negotiations, however difficult they may prove to be, must begin.

Finally, as the idea that humans are above nature is slowly eroded, it is being replaced by the idea that humans are

part of the web of nature, with no part being any more or less important than any other part.

We humans have been so busy searching out the secrets of nature, that we have lost our sense of place in the scheme of things. Because we have been able to develop industry, harness nuclear energy, build great cities and tame rivers, we have seen ourselves top of the pyramid. It is only when we count the costs of acid rain, nuclear fallout, polluted beaches and salination of our rivers and farmlands that we are forced to acknowledge that nature charges some high costs for our immature tinkering. We are slowly coming to realise that the metaphor of a pyramid is the wrong metaphor. The right metaphor is that of a web.

As well as the wrong metaphor, Thomas Berry (1988) would also claim that we have the wrong dream. We have dreamed of domesticating the planet. We should have dreamed of trying to understand our planet and becoming a part of it, rather than apart from it. Certainly, the writing of James Lovelock (1988) in *The Ages of Gaia: A Biography of Our Living Earth* presents a strong argument that we have simply not done enough to understand how Earth functions. We have been so busy exploring the parts of our home that we have missed the bigger picture that is right under our noses - Gaia, or Earth, is a whole and can only be understood as such. We are, according to Lovelock, just another species - neither here nor there in the 4 billion year long history of Gaia - and neither the owners nor the stewards of this planet.

Problems and Solutions

This rationale began with claims by Lester Brown and the Bruntland Commission that we have only a little time left, measured in a decade or two, to institute significant changes to our lifestyle. By 'our lifestyle' they really mean those few nations that are highly industrialised, hold only 25% of the world's population but control 70-80% of the world's resources. Clive Ponting (1991) added a more moderate argument to these claims, but still expresses concern about an 'almost insuperably difficult set of problems to solve'.

To the problems we face, there are solutions. That much is clear. However, while the solutions are simple, they are not easy. We could stop acid rain if we changed, dramatically, our approach to industry. We could eliminate the risk of another Chernobyl by closing down the hundreds of nuclear reactors around the globe. We could minimise the greenhouse effect by banning CFCs immediately and shifting people from private cars to public transport. But these solutions would have significant effects on our standards of living. Our problems are deep seated and the solutions not easy to apply. They may well be 'insuperable'.

Our problems are caused by our demands - we want more energy, more buildings, more crops, more cars, more clothes, and so on. But more than that, we want the latest cars, fashionable clothes, modern buildings. We want more money spent on transport, defence, the police, education, health ... and above all, we want full employment. In short, we are living in a society that is addicted to consumption, and while there is no doubt that it is a comfortable lifestyle and that we vote for politicians who promise to deliver it to us, it does come with high costs. Thomas Berry (1988) argues:

> *We are acting on a geological and biological order of magnitude. We are changing the chemistry of the planet. We are altering the great hydrological cycles. We are weakening the ozone layer that shields us from cosmic rays. We are saturating the air, the water, and the soil with toxic substances so that we can never bring them back to their original purity. We are upsetting the entire earth system that has, over some billions of years and through an endless sequence of experiments, produced such a magnificent array of living forms, forms capable of seasonal self-renewal over an indefinite period of time.*

He concludes that 'we are closing down the major life systems of this planet'. We can only hope that Berry is wrong, but we should act as if he is right.

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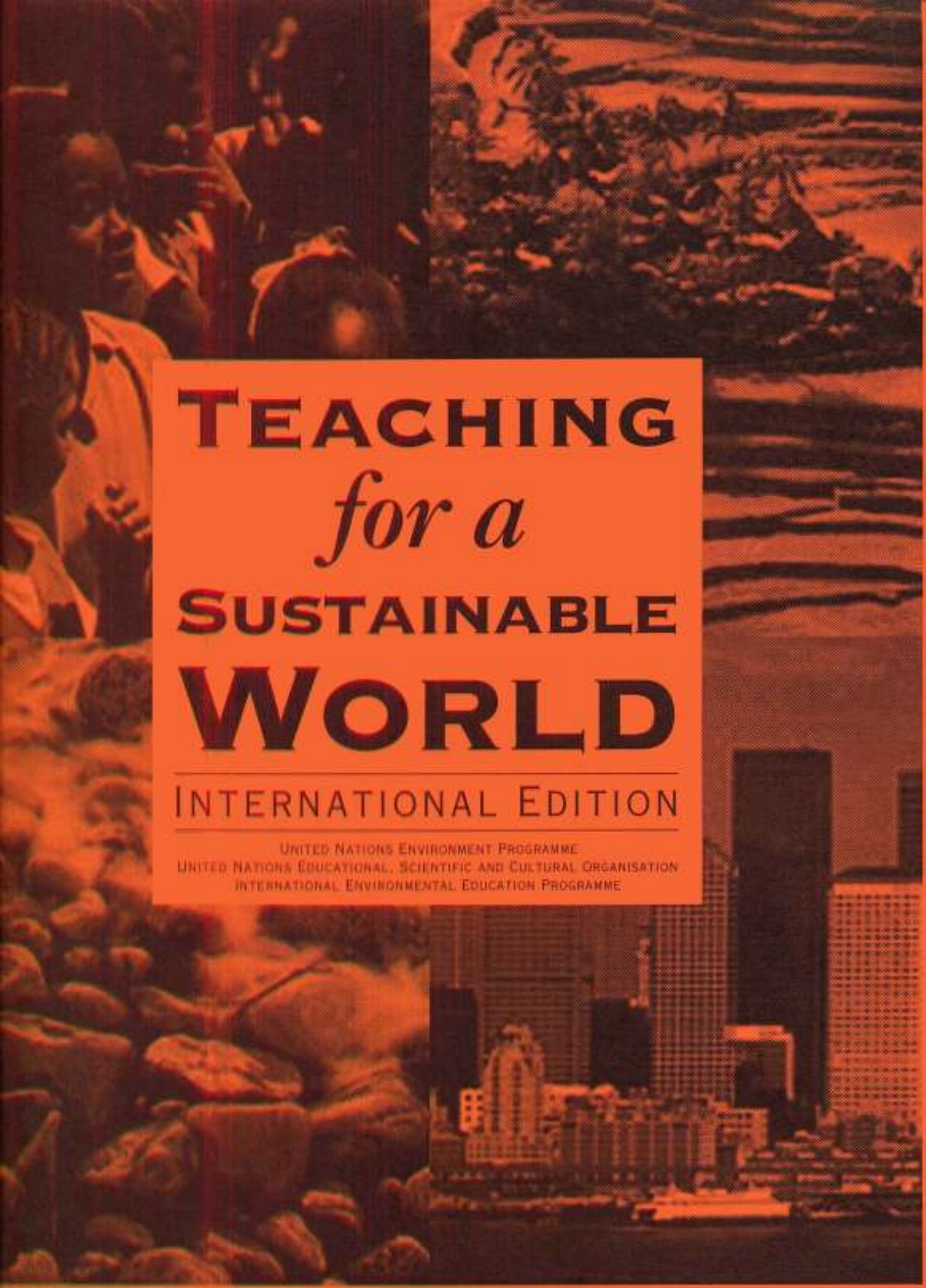
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MODULE 10

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP

AusAID

NEW SCIENCE *a new* WORLDVIEW

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INTRODUCTION

This workshop provides an introduction to the nature of 'new science' and explores its implications for teaching. 'New science', sometimes called postmodern science, is the convergence of thermodynamics, quantum physics and chaos theory. The workshop attempts to link 'new science' concepts with environment and development education by critically examining the modern scientific worldview and its origins. Participants are encouraged to critique this worldview and explore an ecological world view held by an increasing number of theoretical scientists, particularly physicists.

OUTCOMES

Through the activities in this workshop, participants will develop:

- an understanding of the nature and significance of 'new science', its links with environment and development education and its implications for teaching; and
- the ability to apply the 'new science' concepts to teaching and learning activities and programmes.

WORKSHOP OUTLINE

OVERVIEW

Facilitator outlines the organisation of the workshop

1. Science and You

A. Truths and lies about science.

A warm-up activity where participants explore their own and each others' perceptions of science.

B. Classifying statements about science.

A focussing activity looking at statements about science (small group work, reporting back to whole group).

2. Science and Your Worldview

A. Mini-lecture to the whole group about the modern scientific worldview.

B. Small groups design consequence wheels.

C. Mini lecture to whole group about 'new science' and a new worldview.

D. Reclassifying statements about science into industrial and ecological classifications (use same small groups as in 1.B).

3. 'New Science' in Practice

A. Designing concept maps using action research model.

In small groups, participants choose a science topic and consider how they can incorporate 'new science' ideas or choose a social or environmental issue and consider how to plan a unit of work based on an action research model.

B. A teaching unit framework.

Participants evaluate action research as a framework for teaching 'new science'.

C. Putting a 'new science' into practice.

Participants translate what they have learnt into practical plans for the future.

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Overview of Workshop

OHT 2: Quotation by Barry Jones

OHT 3: The Modern Scientific Paradigm

OHT 4: The New Scientific Paradigm

OHT 5: Sample Concept Map

RESOURCES

Resource 1: Statements About Science and Science Education

Resource 2: Sample Consequence Wheel

Resource 3: Origin of Statements on Resource 1

Resource 4: Action Research Model

Resource 5: Reflection on the Implications of 'New Science' and My Teaching Practice

READING

Reading 1: A New Alliance

B) TO OBTAIN

- one piece of 'post it' / sticky paper per participant
- chart paper and pens
- scissors
- envelopes

ADDITIONAL READING

Best, S. (1990) Chaos and Entropy, *Science as Culture*, Vol 2, Part 2, No. 11.

Garg, P. (1990) The Global-ecocentric Paradigm in Education, Holistic Education, 3(1), 11-16.

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INTRODUCTION

OVERVIEW

Introduce the theme of the workshop, 'New Science - A New Worldview' and outline the sequence of the workshop. These are set out on OHT 1.

1. Science and You

- Explores participants' experiences of, knowledge about, and attitudes towards science.

2. Science and Your Worldview

- How modern science has constructed an industrial worldview and how 'new science' can reconstruct an ecological worldview.

3. 'New Science' in Practice

- How 'new science' concepts can be applied practically in the classroom.

1. SCIENCE AND YOU

A. Warm-up Activity - 'Two Truths and a Lie (about science)'

- Give each participant one piece of 'post it' paper.
- Ask all participants to write on the 'post it' two things they believe to be true about science and one thing they believe to be false about science.
- Direct participants to place their 'post its' on the front of their shirt/jumper and mingle with the group. Their task is to read the statements made by others and guess which is the lie.
- Take part in the activity yourself to gauge participants response, discover the nature and range of issues that arise and get to know the group.
- Bring the activity to a close when participants have had an opportunity to talk to most other participants, or after about ten minutes, depending on the size of the group.

B. Focussing Activity

- Distribute a copy of Resource 1 for every two or three participants.
- Working in small groups of two or three, direct participants to cut up the worksheet and classify the statements about science in any way they wish.
- Encourage discussion and debate during the task.
- Ask a spokesperson from each group to relate their choice of categories to the whole group.

  (The categories chosen are not important in the final analysis - the value of the activity is in the discussion)

2. SCIENCE AND YOUR WORLDVIEW

A. Mini-lecture - Modern Science and an Industrial Worldview

These notes and OHTs are sufficient for this mini-lecture. However, facilitators may wish to consult Reading 1 and the other recommended readings.

- Use OHT 2 to introduce the idea that we need to view modern science critically. By looking at the historical development of modern science we can begin to understand its role in shaping our unsustainable industrial worldview.

- Key contributors to the modern scientific paradigm were Bacon, Descartes, and Newton, all 17th century scholars. Plato, however, had some influence on their notions of universal truths and absolutes and others, such as Laplace, followed in the 18th century, reinforcing their ideas of mechanistic determinism.
- The basis of this paradigm is that the universe was seen as a machine governed by universal and unchanging laws which function in a stable and orderly way that can only be comprehended by scientific intelligence.
- This machine theory developed along with the rise of factory civilisation, where science, technology and mathematics were championed as vehicles of progress. Becoming the new locus of knowledge and value they replaced God as the key to unlocking the mysteries of the universe.
- Use OHT 3. The modern scientific epistemology is characterised by:
  - reductionism (seeing things only in terms of their mechanistic parts);
  - objectivism (claiming science and scientists are objective, neutral and unbiased);
  - determinism (asserting that time is reversible and thus all future events can be accurately predicted); and
  - dualisms of mind/body, subject/object, humans/nature.
- Scientific development was, and largely still is, seen in terms of technological progress with little regard for the social and environmental consequences of this so-called advancement. Barry Jones in a recent edition of *21C* writes about the lack of critical perspectives about modern science and draws attention to the inappropriateness of the 'more, bigger, faster, better' emphasis, particularly for the Third World. (Revisit OHT 2)

B. Designing Consequence Wheels

- Ask participants to make small groups and consider the social and environmental consequences of a scientific/technological 'advancement'. Remind them to consider its effect on various cultures and groups within those cultures.
- Direct participants to illustrate these impacts by designing a consequence wheel. (Use Resource 2 to assist explanation). To begin, place the scientific 'advancement' in the centre of a page and circle it. Consider its possible consequences. Draw single lines outwards and write and circle those consequences. Then consider the effects of these consequences. Draw double lines outwards from the first-order consequences and write and circle these second-order consequences. Participants may be able to think of third, fourth and fifth-order consequences.
- Resource 2 is an incomplete example showing the scientific 'advancement' (biotechnology), first-order consequence (replace farmers' skills with scientists' skills), second-order consequence (encourage monocultural cash-cropping) and third-order consequence (decline of subsistence farming). Consequences can be both positive and negative for different people and different places.
- Small groups should have an opportunity to present their ideas to the whole group. If their work was drawn on chart paper, a member from each group could present their work to the whole class. If the group drew their consequence wheel on chart paper, and if a change of pace is desirable, the diagrams could be stuck on the wall allowing the class to see them all be circulating around the room. One member of each group should stay with the diagram to answer any questions. This task may be alternated giving each group member an opportunity to see the work of other groups.

- Copies of each groups' work could be photocopied to provide participants with ideas to take away.

C. Mini-lecture - 'New Science' and an Ecological Worldview

These notes and OHTs are sufficient for this mini-lecture. However, facilitators may wish to consult Reading 1 and the other recommended readings.

- 'New science' has been described as the coalition of three developments in theoretical physics namely, thermodynamics, quantum mechanics and chaos theory.
- Key contributors to 'new science' are Fourier, Thompson, Planck, Heisenburg, Bohr, Lorenz, Mandelbrot, Prigogine and Stengers.
- The basis of 'new science' is that the universe is seen as a complex one in which disorder, diversity, instability and non-linearity are customary.
- It is described as an ecological science which seeks a re-enchantment with nature, and sees the relations between human beings and nature in holistic terms.
- These ideas have developed alongside the rise of postmodern social theory which sees modern reason as inherently repressive.
- Use OHT 4. The development of 'new science' has spawned an ecological worldview which is characterised by:
  - holism (seeing all things as inter-connected and the whole being more than the sum of the parts);
  - a recognition that science is subjective and doesn't have all the answers;
  - a belief that time is irreversible and thus we can't predict future events;
  - a recognition of the dynamic nature of the world;
  - a valuing of diversity; and
  - a realisation that resources including energy are finite and running down.

D. Reclassifying Statements Used in Activity 1B

- Ask participants to rejoin their small group and reconsider the statements about science used in Part 1B, and discuss whether they reflect a modern industrial worldview or a postmodern ecological one. Students may also consider who they think may have made the statements.
- After 5-10 minutes, distribute Resource 3 which describes where the statements originate from.
- Provide a couple of minutes for participants to make comments if they wish.

3. 'New Science' in Practice

A. Using Concept Maps and Action Research

- Again in small groups, ask participants to choose a topic or area of study commonly taught in science and consider how they could incorporate into that topic the ideas and concepts embodied in 'new science'.
- Use concept mapping as a means of expressing these ideas. An example of a concept map is provided as OHT 5. Copies of this can be made for all participants to give them ideas when they are designing units of work.

ACTIVITIES

B. A Teaching Unit Framework

- The action research model (Resource 4) could be used as a framework to plan a unit of work based around a social or environmental issue or problem stemming from the introduction of a scientific 'advancement'.
- Ask participants to work in small groups to:
  - select a social or environmental issue or problem stemming from a scientific 'achievement';
  - describe how they normally teach/would teach a unit on this topic; and
  - evaluate the action research model in Resource 4 as an alternative framework for this teaching unit.

C. Putting it into Practice - a Reflection and Planning Session

- Working individually or in small groups, ask the participants to reflect upon their workshop explorations and direct them to list what, if any, impact these concepts may have on their treatment of content and process in science education. Use Resource 5.
- Ask participants to write a brief paragraph or draw a diagram that represents their personal response to the challenges and message of 'new science'.
- Ask members of the group to share their responses with others.



OHT 1

Overview

- Science and you
- Science and your worldview
- 'New science' in practice

OHT 2

QUOTATION BY BARRY JONES

Source: Barry Jones, *21C Scanning the Future*, Summer, 1991/92.*

The history of science has been very badly taught at school (if at all). It is seen as a steady, single-minded pursuit of truth - as a linear projection based on gradual accumulation of knowledge. But science does not grow by accumulation. Much great science is demolitionist, destroying the accumulated wisdom of the past ... Value and belief systems have been deeply involved in paradigm shifts ... The dogma of technological progressivism with its emphasis on 'more', 'bigger', 'faster' has some repellent sides, has alienated the young and is not a feasible model for the Third World.

* *21C Scanning the Future* is a magazine of culture, technology and science, published four times per year. WWW address http://www.21c.com.au.

OHT 3

THE MODERN SCIENTIFIC PARADIGM

The modern scientific epistemology is characterised by:

- reductionism (seeing things only in terms of their mechanistic parts)
- objectivism (claiming science and scientists are objective, neutral and unbiased)
- determinism (asserting that time is reversible and thus all future events can be accurately predicted)
- dualisms of mind/body, subject/object, humans/nature

OHT 4

The New Scientific Paradigm

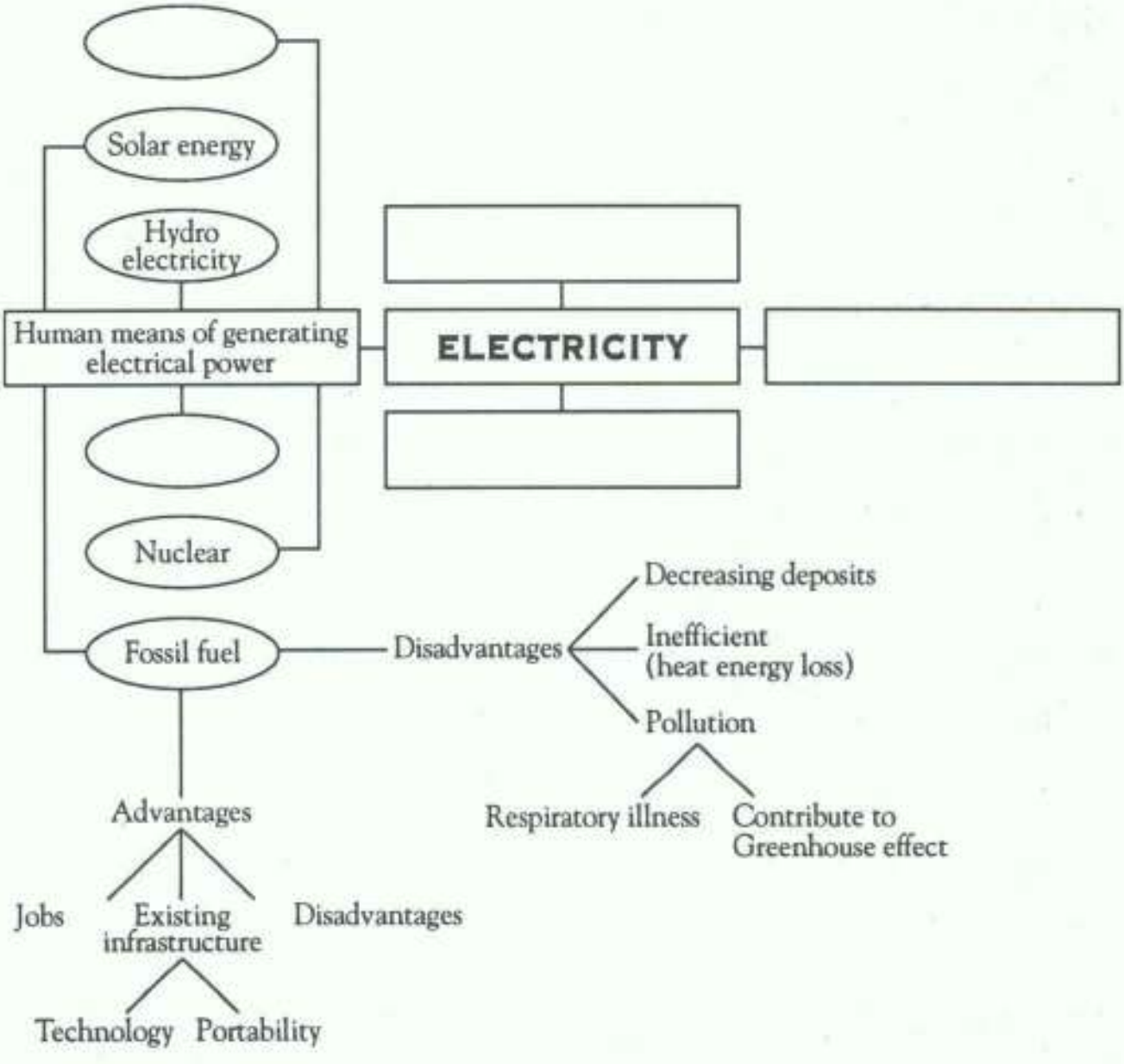
The development of 'new science' has spawned an ecological worldview which is characterised by:

- holism (seeing all things as inter-connected and the whole being more than the sum of the parts)
- a recognition that science is subjective and doesn't have all the answers
- a belief that time is irreversible and thus we can't predict future events
- a recognition of the dynamic nature of the world
- a valuing of diversity
- a realisation that resources including energy are finite and running down

OHT 5

SAMPLE CONCEPT MAP

Source: J. Rifkin (1989) *Entropy - Into the Greenhouse World*, Bantam Books, New York.



The emerging energy crisis and global warming trend represent the greatest challenge to the survival of our species in recorded history. To effectively meet that challenge, the human race will need to develop a new world view that takes into account the underlying tenets of the laws of thermodynamics and especially the Entropy Law.

RESOURCE 1

STATEMENTS ABOUT SCIENCE AND SCIENCE EDUCATION

A

There is uncertainty. There always is about science. That's the whole point. No scientist of any standing will claim to be privy to absolute truth. The very concept is unscientific.

B

It is also part of the human condition to use knowledge to gain control. Knowledge of physics has led to developments in technology, some of which have had a profound impact on our social structures.

C

The real and legitimate goal of the sciences is the endowment of human life with new invention and riches.

D

Science, at best, is on the periphery in our corporate culture, and is not yet part of our public or political culture.

E

In community debate, science can help explain the implications of proposed courses of action and help the nation get onto the path of sustainable development.

F

I am not saying that we do not need organised science; only that we need to recognise its frailty as a human condition, that it is slow, and its record in handling immediate and environmental problems is far from good. It tends to do only those things that scientists find easy to do and want to do anyway.

G

Science is the literature of truth.

H

Thinkers of the 18th and 19th centuries thought that science could save us, but not many people think that way now.

I

It [science] is also indirectly responsible, through the application of its findings, for generating much of the material wealth and for providing most of the employment which preserves our way of life.

J

Most citizens of the developed world are deluded by the belief that pouring money on science is the way to get results.

K.

Science knows only one commandment: contribute to science.

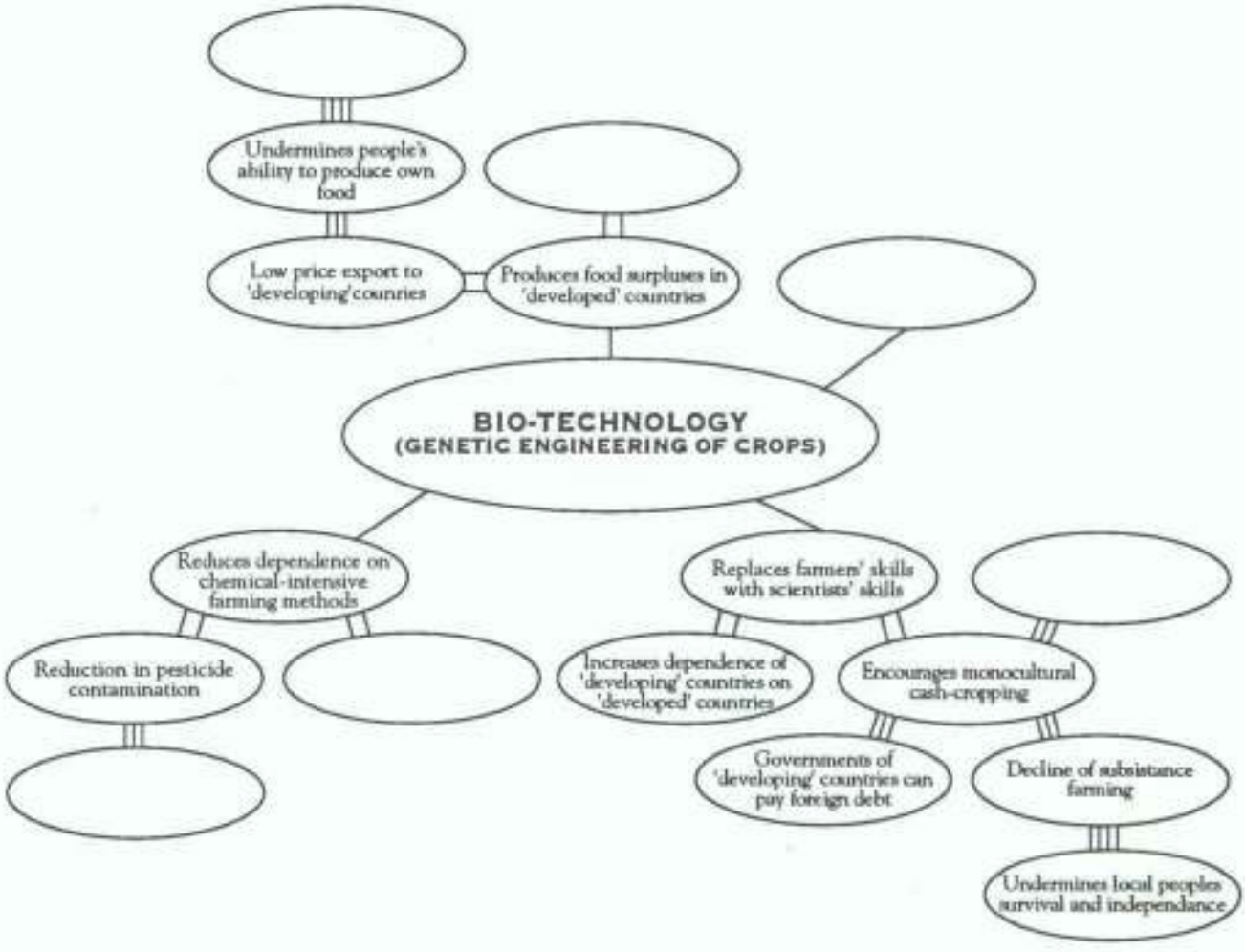
L.

Our scientific power has outrun our spiritual power. We have guided missiles and misguided men.

RESOURCE 2

SAMPLE CONSEQUENCE WHEEL

Source: Based upon ideas in Editorial, *Science as Culture*, 2(1), No 13 , 1991.*



By treating nature as a profit machine of ever-increasing efficiency, agriculture has encountered severe ecological limits in sustaining that project.

* *Science as Culture* is available from Process Press, 26 Freegrove Road, London N7 9RQ, Unite Kingdom

RESOURCE 3

ORIGINS OF STATEMENTS ON RESOURCE 1

A. Robyn Williams, The Science of Politics, *21C*, Autumn 1991.

B. Victorian Curriculum and Assessment Board, 1990.

C. Francis Bacon, circa 1620.

D. Barry Jones, *New Scientist*, 23 May 1992.

E. Prof Adrienne Clarke, Chairperson of CSIRO, 1992.

F. James Lovelock (1992) *Gaia: The Practical Science of Planetary Medicine*.

G. Josh Billings.

H. Max Charlesworth, *21C*, Summer 1991/92.

I. Board of Senior Secondary School Studies, Queensland, Junior Syllabus in Science.

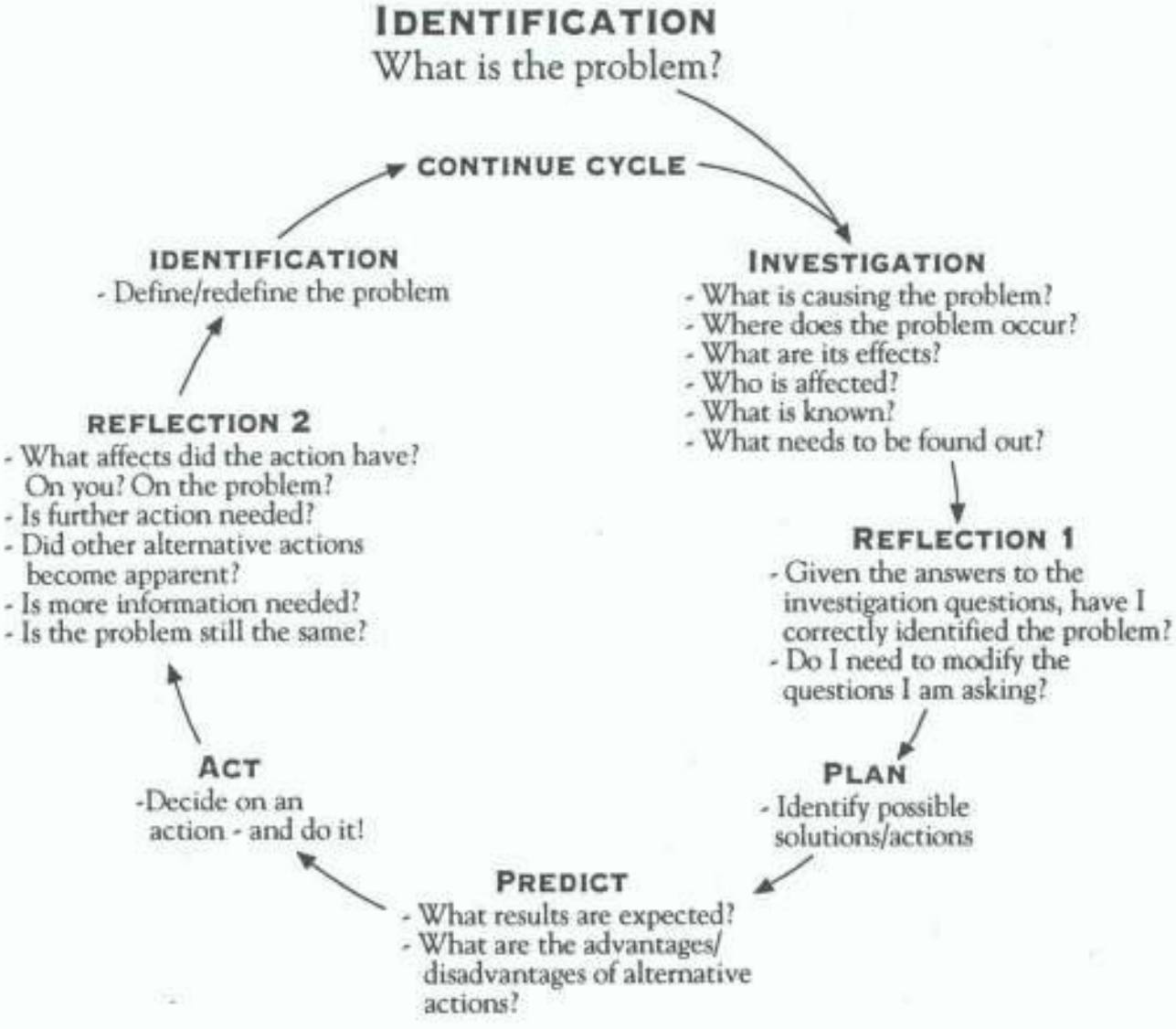
J. James Lovelock (1992) *Gaia: The Practical Science of Planetary Medicine*.

K. Bertolt Brecht (1943) *Galileo*.

L. Martin Luther King Jr. (1963) *Strength to Love*.

RESOURCE 4

ACTION RESEARCH MODEL



RESOURCE 5

REFLECTIONS ON THE IMPLICATIONS OF 'NEW SCIENCE' AND MY TEACHING PRACTICE

Implications for Treatment of Content	Implications for My Teaching Practice

Reflections on the implications of 'new science' for my personal life (e.g. use of resources)

READINGS

READING 1

A NEW ALLIANCE

A brief look at the emergence of 'new' science and its contribution to an ecological worldview

In recent years the emergence of 'new science' has become apparent with the publication of numerous articles and books and the appearance of many conferences and programmes on the topic. Such is the interest in the nature of 'new science' that these new developments have been reported not just for scientists but popularised thus reaching a wider audience. Coined the 'new science' by Prigogine and Stengers in their revolutionary book, *Order Out of Chaos*, this trend is often referred to as postmodern science. Advocates of this view of science see modernity as '...an historical era of wanton destruction', (Best, 1991, p. 189) and view postmodernism as '...an historical period yet to be created - where human beings exist in harmonious relations with nature, each other and their own selves' (Best, 1991, p. 189). The extent to which this 'new science' can contribute to this notion of caring for the earth, each other and ourselves - the basis of environmental education - is problematic. However, the question warrants exploration, not in the least because 'new science' may well prove to be an influential ally, one which the environmental education movement may do well to enlist in order to gain broader acceptance and support to achieve its goals.

The nature of the 'new science' or postmodern science is such that it rejects modernism, seeing its expression in science as inherently repressive. Breaking from the mechanistic, objectivistic and deterministic worldview of modern science, 'new science' has been defined as an ecological science, viewing nature, people and their relationships in an holistic manner (Prigogine and Stengers, 1984). This rejection of modernism is the basis of both postmodern science and postmodern social theory, with social theorists describing the modern rationalisation process as '... a juggernaut of domination' (Best, 1991, p. 188). It is this bringing together of scientific and social theory - physics and philosophy, chemistry and history - that is one of the most exciting aspects of postmodernism. The French title of Prigogine and Stengers' *Order Out of Chaos - La Nouvelle Alliance* - demonstrates the importance that this Nobel award winning physicist and his co-author, a chemist and philosopher, place on this partnership.

This move towards holism, now being attempted in western traditions, is being assisted by the new discourse between postmodern science and social theory. Proponents of holistic education view this movement '...from the mechanistic industrial age to a global, ecological age... as part of a larger transformation in western civilisation' (Gang, 1990, p. 11). This transformation is vital, for, as Griffin (in Best, 1991, p. 188) says, 'The continuation of modernity threatens the very survival of life on our planet.' The transformation of science in this context is particularly vital as modern science has perhaps been most guilty of reductionism - the very antithesis of holism (Toffler in Prigogine and Stengers, 1984).

Although shaped by many scientific and social influences, postmodern science has emerged largely as the result of three major developments in the field of physics. These developments in thermodynamics, quantum mechanics and chaos theory have debunked modern scientific epistemology by systematically discrediting the basis upon which that worldview was built. Not only are Descartes and Newton unfashionable, but their theories which have shaped and dominated our industrial worldview have been proven to be false, by the very science that embraced their ideas - physics. A brief historical overview of these developments demonstrate that these changes have been a long time in coming.

In 1811 Fourier advanced what later became known as the first law of thermodynamics, which stated that energy cannot be created or destroyed but moves from available to unavailable states. His research, which won him acclaim at the time, rejected two long-held Newtonian concepts. His thesis maintained that systems were dynamic not passive, and that time was irreversible rather than reversible (Prigogine and Stengers, 1984). These developments were augmented 41 years later by Thompson whose research supported Fourier's findings and went on to suggest that energy was increasingly being lost from systems. This notion of energy loss became known as the second law of thermodynamics, although it is also referred to the law of entropy (Best, 1991). Both laws of thermodynamics can be stated in one sentence. 'The total energy content of the universe is constant and the total entropy is continually increasing' (Asimov in Rifkin, 1989, p. 47). These concepts

have gained wide acceptance in the scientific community. Of entropy, Lovelock (1991, p. 31) has said, '...These laws [thermodynamics] rule the whole of our universe, and Gaia has had to evolve within their restrictive boundaries.' However the last word on entropy, for now at least, belongs to the genius of Albert Einstein, who said:

> *...A theory is more impressive the greater is the simplicity of its premises, the more different are the kinds of things it relates and the more extended its range of applicability... It [thermodynamics] is the only physical theory of universal content which I am convinced, that within the framework of applicability of its basic concepts will never be overthrown.* (Einstein in Rifkin, 1989, p. 59)

The next development which cast doubt on Newtonian physics was the rise of quantum mechanics which proved that some of Newton's theories do not work at all in the microscopic world. It was in 1900 that Planck discovered that the energy of heat radiation moves in abrupt discontinuous bursts (quantas), rather than the smooth continuous flow characterised by Newton or Descartes' clockwork world (Gang, 1990). However, perhaps quantum mechanics' greatest contribution to the debunking of modern science is its rejection of objectivity and so-called scientific detachment. Heisenburg and Bohr both maintain that within the microscopic world of quantum mechanics, matter cannot be isolated, precisely identified or predicted as they really are. This is because '...in the process of perceiving and analysing sub-atomic particles, the scientist unavoidably influences their behaviour through the use of measuring instruments' (Best, 1991, p. 197).

Whereas quantum mechanics exerts its influence in the microscopic world, chaos theory, the third component of the 'new science' extends into the macroscopic world and to physical processes in general. Emerging in the 1970s, chaos theory itself has three concepts which together form the basis of 'new science''s most recent and popular treatise. The first of these is Lorenz's strange attractors, otherwise known as the butterfly effect. A meteorologist and mathematician, Lorenz showed that apparently deterministic systems could be unpredictable and chaotic by demonstrating the randomness of weather patterns (Gleick, 1989). Like much of chaos theory, this concept has found many wider applications.

Mandelbrot's concept of fractals, perhaps the most visually spectacular of the three, has created a new geometry of nature. This computer-generated artform presented mathematicians with a puzzling paradox. The Mandelbrot set is, according to its admirers, the most complex object in mathematics, yet it can be reproduced using the simplest descriptions (Gleick, 1989). Emerging from this work, amongst others, was the idea that complex systems give rise to simple behaviour and conversely that simple systems give rise to complex behaviour.

Prigogine and Stengers' concept of dissipative structures completes the trilogy of chaotic principles. These structures, which arise out of fluctuations within systems, are called dissipative because they require more energy to sustain themselves than the simpler structures they replace (Toffler in Prigogine and Stengers, 1984). This notion is controversial for a number of reasons, not the least of which is because it suggests that order can arise spontaneously out of random movement.

Each of these chaotic concepts propose that reality is dynamic, complex, random and unpredictable and have successfully represented these ideas with the assistance of remarkable, colourful computer-generated images. To create these images, programmes using complex non-linear equations have been devised in attempts to construct mathematical models of real systems in order to explain how they work.

But how does all this relate to environmental education and how can it assist in the achievement of environmental education goals? It may be useful at this stage to describe what the goals of environmental education are. According to Greenall (1987, p. 15), the aims of environmental education are:

- *to help participants acquire an awareness of and sensitivity to the total environment;*
- *to help participants develop a basic understanding of the total environment and the interrelationships of man (sic) and the environment;*
- *to help participants develop the skills necessary for investigating the total environment and for identifying and solving environmental problems;*
- *to help participants acquire social values and strong feelings of concern for the environment;*
- *to help participants acquire the motivation for actively participating in environmental improvement and protection;*
- *to help participants identify alternative approaches and make informed decisions about the environment based on ecological, political, economic, social and aesthetic factors; and*
- *to provide participants with opportunities to be actively involved at all levels in working towards the resolution of environmental problems.*

Only some of these aims address education *for* the environment, which is arguably the only time 'real' environmental education takes place (Curriculum Development Centre, 1981; Fien, 1988). The last four aims listed by Greenall contribute to education *for* the environment, as they deal with values education, environmental problem-solving and decision-making and taking environmental action. So then, to what extent can postmodern science contribute to these?

Briefly, its contribution to values education, problem-solving and environmental action lies in its questioning and rejection of modern industrial values and beliefs in favour of postmodern ecological ones. These ecological values, together with key concepts of environmental education (Meadows, 1989), strengthen the moral and intellectual foundation of environmental education.

Paradoxically, the strength of postmodern science's contribution to environmental education lies in the high status that science has enjoyed for so long in western societies. Many people are only willing to accept ideas if they can be proven scientifically, even though 'new science' says we can't possibly know everything and as Meadows' (1989, p. 10) adds,'....'we don't even understand how much we don't understand.'

The role of science in shaping the modern worldview has been substantial. Modern physics preached a doctrine of domination, supremacy and progress at any cost. 'New science' has disproved many of the precepts of modern science, so if science still has status in our society it should assist in shaping the new worldview. Beliefs emerging from postmodern science advocate making fundamental changes in the modern value base, which includes transforming prevailing concepts and replacing inappropriate processes. For example 'new science' asserts that:

- things should be viewed holistically;
- diversity is desirable;
- resources are finite;
- energy is running down;
- time is irreversible;
- the world is dynamic;
- science is subjective rather than objective; and
- science doesn't have all the answers.

The synthesis of these ideas can be expressed as action we must take to transform the way we view the world in order to save it and its inhabitants. Rifkin (1989, p. 293) says:

> *The emerging energy crisis and global warming trend represent the greatest challenge to the survival of our species in recorded history. To effectively meet that challenge, the human race will need to develop a new world view that takes into account the underlying tenets of the laws of thermodynamics and especially the Entropy law.*

What postmodern science does not address very well are the social implications of the theory. Perhaps that is being left to postmodern social theorists! Rifkin, however, makes some attempt to fashion links and does so by advocating local diversity, decentralisation, down-sizing, regional self-sufficiency, and redistribution of wealth. Unfortunately, he does not provide any blueprint for this transformation, except to say that governments must provide incentives for change. Class and the growing underclass is not mentioned at all in his thesis nor does it feature in Toffler's (1980) work, though at least he advances the notion that individuals must work together for structural change. Of this transition he says;

> ....*we should not think of a single massive reorganisation or of a single revolutionary, cataclysmic change imposed from the top, but of thousands of conscious, decentralised experiments that permit us to test new models of political decision making at local and regional levels in advance of their application to the national and transnational levels.* (Toffler 1980, p. 453)

This advice is heartening to those seeking to educate for the environment, a fairer future, a better world for all, a healthy planet and a healthy people. It helps us believe that although the transition from the modern scientific paradigm to the new ecological one is problematic, it is also do-able and we have no choice but to believe that this is so.

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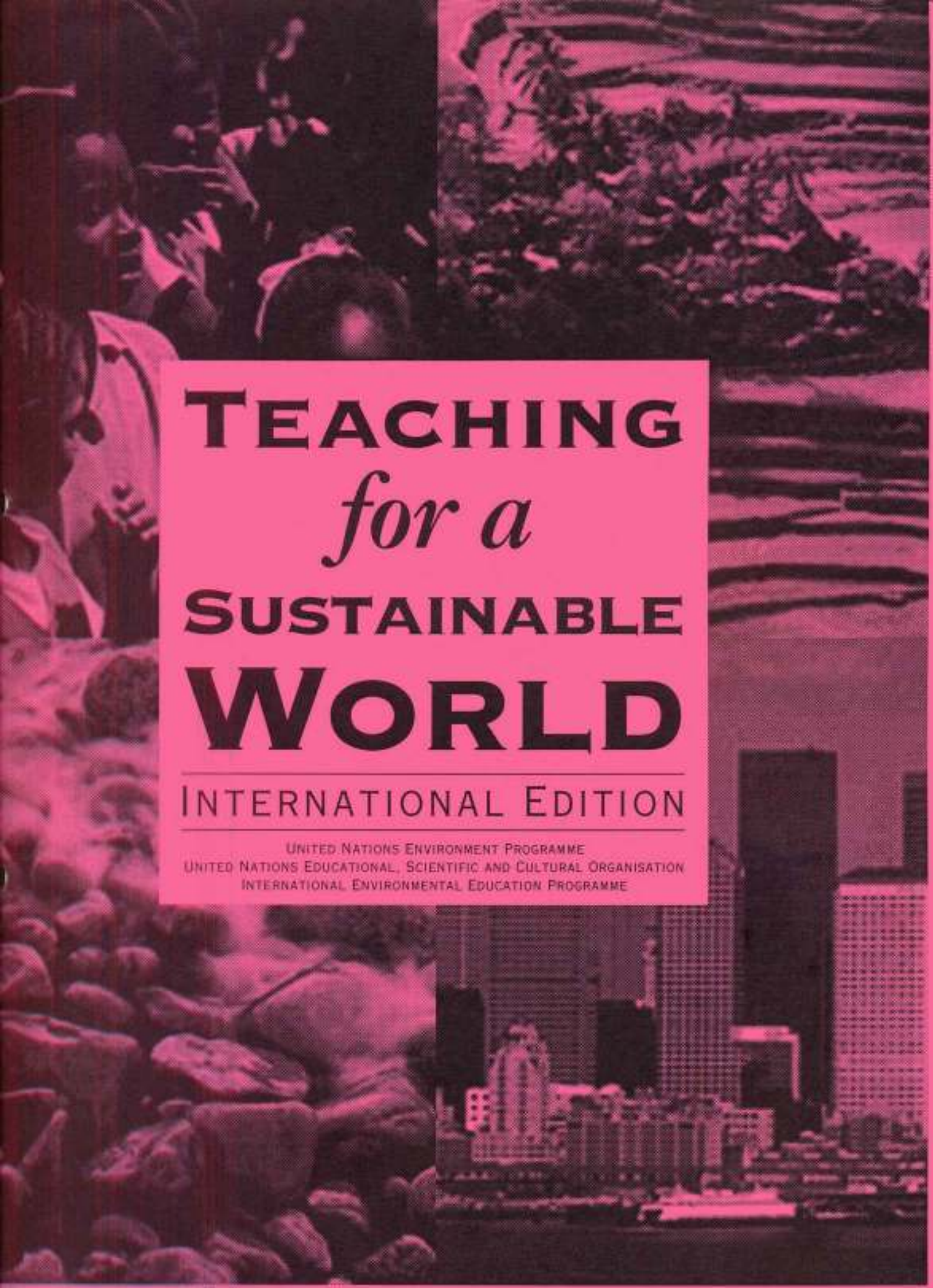
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MODULE 11

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID
AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT
AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC
GRIFFITH UNIVERSITY

HEALTH ENVIRONMENT *and* COMMUNITY DEVELOPMENT

HELEN SPORK
GRIFFITH UNIVERSITY
AUSTRALIA

INTRODUCTION

If we are to consider environment and development issues with the broadest of perspectives, then we will ultimately be brought to focus on the rights of humans and nature and the inequitable distribution of wealth and power within and between people, communities and nations. Similarly, if we are to view health issues in the broadest sense, we will come to the same essential points of focus.

The solutions to environment, development and health issues are closely entwined and reflect the complex links between the social, economic and political factors that play a major role in determining the well-being of people, populations and nature. The development of communities at local, national and global levels through the equitable distribution of resources and power is increasingly being acknowledged as the common goal for those working towards health, peace and sustainability for all.

This workshop provides an introduction to the nature of health and community development and considers the interrelationships between achieving healthy people, healthy communities and healthy natural environments. These interrelationships suggest new relationships between environmental education, development education and health education.

OUTCOMES

This workshop aims to address three key questions:

1. What is 'health'?
2. How is health achieved?
3. Who achieves health?

It is from these three key questions that the following workshop objectives are derived:

- to develop a broad understanding of the nature of health;
- to examine the links between healthy people, healthy communities and healthy natural environments;

- to consider the issues of sustainability, social justice and equity as they relate to achieving health for all;
- to consider the process of community development as it contributes to healthy people, communities and natural environments; and
- to consider the links between environmental education, development education and health education

Emerging from the workshop key questions and objectives are a range of central themes. The major ones are:

- health
- people and community
- environment
- interconnectedness
- social justice
- equity
- sustainability
- community development
- participation
- action
- cooperation
- commitment

WORKSHOP OUTLINE

The total workshop is divided into eleven activities which have been developed to flow in the suggested sequence below.

1. General Introduction

A brief introduction to the workshop title and rationale.

2. Warm-up Activity - Tea Party

An activity which promotes some initial discussion about the major issues which will arise during the workshop. This activity also provides a framework for the evaluation component of this workshop.

3. Introduction to Workshop Objectives

An overview of the key questions to be addressed in the workshop and the related workshop objectives.

4. Focussing Mini-lecture on the Nature of Health

A facilitator-led, information-giving session which aims to set the scene for the following workshop components by developing a broad working definition of 'health'. In particular, the concept of health being multidimensional and a dynamic process will be highlighted. The interconnectedness of healthy people, healthy communities and healthy natural environments will also be introduced.

5. Workshop Activity - Woolly Health Web

An activity which involves all participants in constructing a web of wool during their active exploration of the connections and interrelationships between the various dimensions (physical, social, emotional, intellectual, cultural, spiritual, ethical, ecological) and areas of health (personal, community, natural environments).

6. Workshop Activity - Let's Go Health Shopping

A simulation game which reinforces the interconnectedness of healthy people, communities and natural environments and introduces the issue of inequality in health. The underlying reasons for some individuals and groups having less access than others to the resources and conditions that promote health will be explored during the game.

7. Focussing Mini-lecture on the Nature of Community Development

A facilitator-led, information-giving session which defines the nature of community development, explores its possible contributions to addressing health inequities and health problems in communities and identifies the wide range of strategies used in the community development process.

8. Workshop Activity - Community Development Case Studies

An activity which involves participants in small groups reading, discussing and analysing a case study of community development. Using key questions, participants will identify the strategies of community development that were involved in addressing the health issue faced by the particular group in the case study as well as the overall outcomes for the community. Several case studies are provided for selection to illustrate the community development process in a range of social contexts.

9. Debriefing Activity - Concept Mapping

In pairs or individually, participants review the key workshop themes or concepts by developing their own concept map. The concept map should reflect each participant's personal understanding and appreciation of the meaning and interconnections of the key themes.

10. For Consideration - Five Educations? One Education?

A connection is made to the module *Exploring the Links - Environment and Development* to stimulate some thought about health education having many things in common with 'The Four Educations'. The question is posed - should it be 'Five Educations? One Education?'

11. Evaluation Activity - Tea Party Revisited

This activity uses the same questions and process as for the warm-up activity. Each question is now discussed in the light of new understandings from the workshop. Participants review personal developments in learning.

POSSIBLE WORKSHOP SESSION ORGANISATION

Some suggestions regarding how the activities may be divided into workshop sessions are:

A. Running the workshop in 2 sessions

Session 1: Workshop Activities 1-6

Session 2: Workshop Activities 7-11

B. Running the workshop in 3 sessions

Session 1: Workshop Activities 1-5

Session 2: Workshop Activities 6-7

Session 3: Workshop Activities 8-11

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Workshop Questions and Objectives
OHT 2: A New View of Health
OHT 3: Healthy People
OHT 4: Healthy Communities
OHT 5: Healthy Natural Environments
OHT 6 : Linking it all Together
OHT 7A & B: Reflections of Fundamental Principles
OHT 8: Working Towards Health For All
OHT 9A & B: What is Community Development?
OHT 10: Case-Study Questions
OHT 11: Workshop Themes
OHT 12: Personal Concept Map A
OHT 13: Personal Concept Map B

RESOURCES

Resource 1: Tea Party
Resource 2: Card Labels for 'Woolly Health Web'
Resource 3: Making the Links: Negotiating and Recording Sheet for 'Woolly Health Web'
Resource 4: Your Health Shopping List
Resource 5: Let's Go Health Shopping: The Game
Resource 6: Let's Go Health Shopping: Auctioning Table
Resource 7: Case Study 1: Community Health and Environmental Action
Resource 8: Case Study 2: Health in a Social and Cultural Context
Resource 9: Case Study 3: The Village Development Committee: Community Participation in Development in Papua New Guinea
Resource 10: Case Study 4: Participatory Design Project in San-Chung, Taiwan's Hou-Chu-Wei-Park

B) TO OBTAIN

Activity 5: Pins (one per participant)
8 balls of wool (each of a different colour)
Recording pens
Scissors

Activity 6: Envelopes (one per participant)
Plastic counters (approx. 144 per group of 6)

Activity 9: Blank sheets of paper (one per participant)

Activity 10: Resource 3 and OHT 3 from the module *Exploring the Links - Environment and Development*.

ADDITIONAL READING

Bauman, A. (1989) The Epidemiology of Inequality in 2020 A Sustainable Healthy Future: *Towards an Ecology of Health*, La Trobe University, Melbourne, pp. 43-67.

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1. General Introduction

Introduce the title of the workshop - 'Health, Environment and Community Development'. Briefly outline the rationale for investigating health, environment and community development issues within the context of development and environmental education (See introductory statement on first page).

2. Warm-Up Activity: Tea Party

This activity seeks to promote some initial discussion about the major issues which will arise during the workshop. It also helps to provide a framework for workshop evaluation in which participants are invited to review personal developments in learning.

- Distribute a copy of Resource 1 to each participant, drawing attention to the unfinished statements.
- Participants form two concentric circles of even numbers, with the inside circle facing outwards and the outside circle facing inwards. Each participant in the outside circle should stand facing a person in the inside circle to form a discussion pair.
- Give the discussion pairs one minute to discuss 'unfinished statement no.1' on the resource. Call 'stop' when the minute is up.
- The outside circle now moves one step to the left so that each person is facing a new partner in the inside circle. In the new discussion pairs, give participants one minute to discuss 'unfinished statement no. 2' on the resource. Call 'stop' when the minute is up and motion for the outside circle to again move one step to the left to form new discussion pairs.
- Continue this process, giving one minute for discussion of each successive statement until all have been addressed.
- In conclusion, explain that the tea party discussion has introduced most of the key issues of the workshop and relates directly to the workshop objectives. It may be useful to also explain that the tea party discussion will be conducted again at the end of the workshop to act as a review and evaluation activity.

3. Introduction to Workshop Objectives

- Display OHT 1 which introduces the three key questions around which the workshop is developed.
- Introduce the workshop objectives which are derived from the key questions.
- You may relate the key questions and objectives to the tea party discussion from Activity 2 of the workshop.

4. Mini-lecture: The Nature of Health

This mini-lecture defines the broad meaning of the term 'health', and highlights the interconnectedness of healthy people, healthy communities, and healthy natural environments.

- Explain that a new and broader view of health is emerging to accompany the many social, economic, political and environmental challenges facing humankind.

- Display OHT 2 which contrasts the old/narrow view of health to the new/ broader view currently emerging. Discuss the five major trends of redefinition as listed on the OHT.
- OHT's 3, 4, 5 and 6 demonstrate that health is:
  - multidimensional with each dimension being interdependent and constantly interacting
  - a dynamic process that is constantly changing
  - achieved when there is balance and sustainability across all dimensions; that to achieve balance in one requires balance in the others.
- Display OHT's 3, 4 and 5 in successive order and discuss how the various dimensions within individuals, communities and natural environments relate to health. Emphasise that a comprehensive view of health necessitates the consideration of individuals, communities and natural environments as integrated and interconnected (as illustrated in OHT 6).
- Display OHT 6 as the overview and definition of health. Discuss the complex and intricate links between the health of people, communities and natural environments. Discuss briefly how change to any one dimension would have health consequences to some or all other dimensions. Explain that these interconnections will be explored further in the following workshop component.

5. Workshop Activity: Woolly Health Web

This activity is a practical way of exploring in detail, the connections and interrelationships between the various dimensions (physical, social, emotional, intellectual, cultural, spiritual, ethical, ecological) and areas of health (personal, community, natural environments).

'Woolly Health Web' involves participants in identifying and negotiating links between the various areas (personal, community, natural environment) and dimensions of health (physical, social, emotional, intellectual, cultural, spiritual, ethical, ecological). Participants become representatives of the various health components and when links are found between them, these are indicated by wrapping wool around the representative. By the end of this activity, a web of different coloured wools offers a very effective visual representation of the interconnected nature of health. (This activity is adapted from 'Woolly Thinking' in Pike, G. and Selby, D. (1988) *Global Teacher, Global Learner*, Hodder and Stoughton, London, pp. 141-2,).

The following facilities/materials are required:

- A large open space in the classroom
- 8 sets of card labels (see Resource 2) cut out, 3 in each set
- Pins for attaching labels to participants
- 8 balls of wool each of a different colour
- Resource 3 'Making the Links: Negotiating and Recording Sheet for "Woolly Health Web"'
- 8 pens for recording

The following instructions are written for a group of up to 24 participants. If your group is larger, you will need to make adjustments along the way.

- Participants form eight small groups of 2-3 participants in each. Groups choose or are allocated one of the following eight health components (based on the diagrams presented in workshop component 4 using OHT's 3, 4, 5 and 6):
  - The *physical* health of the *natural environment*.
  - The *bio-ecological* health of the *natural environment*.
  - The *physical* health of the *community*.
  - The *social-emotional* health of the *community*.
  - The *intellectual-cultural-ethical* health of the *community*.
  - The *physical* health of the *individual*.
  - The *social-emotional* health of the *individual*.
  - The *intellectual-spiritual-ethical* health of the individual.

  Note: If there are more than 24 participants, divide these health components further to add additional groups to the activity. For example, social-emotional community health can be divided into social community health and emotional community health.
- Give each participant in the group a label to wear which identifies the health component they are representing.
- Each group then appoints a 'static negotiator' (SN) and 1-2 (depending on group size) 'mobile negotiators' (MN).
- The SNs from each group now move into a circle leaving approximately double arms length distance between each person. This should allow enough space for movement during the activity. SNs are each given a different coloured ball of wool and asked to tie the end of their ball of wool around their waist. Also, give each SN a copy of Resource 3 and a recording pen.
- The role of each SN is to stay stationary in the circle while the MNs move out into the circle to have discussions with the other SNs.
  - Discussions between sets of SNs and MNs should involve the identification and negotiation of the links between the two health components they are representing. For example, the *physical* health of the *individual* can be adversely affected through stress, anxiety, depression, injury or drug abuse if the *community* is experiencing poor *social and emotional health* through unemployment, homelessness, domestic crime and community alienation.
  - The SNs are also responsible for recording the negotiated links onto Resource 3 in the appropriate square on the grid.
  - The MNs are responsible for negotiating the links between their health component and the other seven components. Each time a link is discussed and then recorded, the two balls of wool are passed by the MNs across the circle, looped around the waists of the opposite SNs and then passed back to the SN from whom it started.
  - As the activity progresses, a web of connections between the health components will be produced. Always keep the wool taut. As the web progressively becomes more closely woven, the MNs will have to crawl underneath the web to continue their linkings.
- When appropriate, call for negotiations to stop and for the SNs to carefully sit down while still keeping the web intact.
- Debriefing: Discussion of the constructed web could involve points such as:

- noting the intermixing of the different colours in wool which symbolises the complexity of the nature of health;
- discussing the implication of the complexity of health for the achievement of healthy people, communities and natural environments;
- noting any absences of links and providing explanation;
- noting where links are particularly strong and providing explanation;
- noting some specific examples of links negotiated between the various health components.

6. Workshop Activity: Let's Go Health Shopping

This game has a number of objectives:

- to reinforce the interconnectedness of healthy people, communities and natural environments;
- to highlight that human health is determined just as much by social, economic and environmental factors as by individual lifestyle choices and medical advances;
- to introduce the issue of health inequities;
- to explore the underlying reasons for some individuals and groups having less access than others to the resources and conditions that promote health;
- to demonstrate that health for all is achieved where there is an equitable distribution of resources, conditions and power.

The following materials and preparation are required for this game.

Materials

Resource 4 'Your Health Shopping List'

Resource 5 'Let's Go Health Shopping: The Game'

Resource 6 'Let's Go Health Shopping: Auctioning Table'

OHTs 7A and B 'Reflections of Fundamental Principles'

Envelopes (one per participant)

Plastic counters or cardboard squares (health units). You'll need approximately 144 counters per group of six.

Preparation

Put envelopes into sets of six. For each set of six:

- 2 envelopes contain 35 counters each
- 2 envelopes contain 25 counters each
- 2 envelopes contain 12 counters each
- On the inside flap of each envelope, write the number of counters contained inside.

Instructions

- Divide participants into 'communities' of six people each. Each community can form its own circle.
- Give each participant in each community a copy of Resources 4, 5 and 6.
- On an individual basis, participants read the items on the Health Shopping List (Resource 4) and then do Procedure 1 (Prioritising) from Resource 5.

For example:

		Item	Standards	Health Units
1.	√	Housing - space, safety, warmth, security, amenities, aesthetics, hygiene, location	excellent average poor	
2.	X	Work and Employment - occupation safety, job security, work satisfaction, autonomy, hygiene, job opportunities, working hours, sick and holiday benefits, social interaction	excellent average poor	
3.	√	Environmental Surroundings (natural and built) - aesthetics, levels of pollution, location, safety, sense of place, space, design, ecological diversity and balance	excellent average poor	

Participants should be made aware of aim (a) of the game: To be as healthy as you can. This activity should once again highlight the interconnectedness of healthy people, communities and natural environments. That is, that one cannot be achieved without the others.

- On an individual basis, participants do Procedure 2 (Counting) from Resource 5. Distribute the six envelopes randomly between participants in each community. It is important that participants do not yet reveal to other participants how many health units they have been allocated. In this way, it is not evident until later in the game, when the realisation is most powerful, that there is great inequity in health unit allocation amongst the community members.
- On an individual basis, participants do Procedure 3 (Allocating) from Resource 5. For example:

		Item	Standards	Health Units
1.	√ 3	Housing - space, safety, warmth, security, amenities, aesthetics, hygiene, location	excellent average poor	
2.	X 2	Work and Employment - occupation safety, job security, work satisfaction, autonomy, hygiene, job opportunities, working hours, sick and holiday benefits, social interaction	excellent average poor	
3.	√ 6	Environmental Surroundings (natural and built) - aesthetics, levels of pollution, location, safety, sense of place, space, design, ecological diversity and balance	excellent average poor	

At this point, those participants with 35 or 25 health units will be able to allocate several health units to each list item while those participants with only 12 health units will be able to allocate only one unit for most items.

Participants should be made aware of aim (b) of the game : To use up all your health units.

- Participants now function as a community and do Procedure 4 (Auctioning) from Resource 5. Resource 6, the auctioning table, will also be required at this point. During auctioning, participants will be bidding for the purchase of excellent, average and poor standards of each list item and recording personal payments on to Resource 4 in the health units box at the right side of the sheet. For example:

		Item	Standards	Health Units
1.	✓ 3	Housing - space, safety, warmth, security, amenities, aesthetics, hygiene, location	excellent (average) poor	4
2.	X 2	Work and Employment - occupation safety, job security, work satisfaction, autonomy, hygiene, job opportunities, working hours, sick and holiday benefits, social interaction	excellent (average) poor	3
3.	✓ 6	Environmental Surroundings (natural and built) - aesthetics, levels of pollution, location, safety, sense of place, space, design, ecological diversity and balance	(excellent) average poor	8

It is during this auctioning stage that participants will become aware that some people have more health units than others, and therefore, that advantaged and disadvantaged groups exist in the community when it comes to achieving health.

The facilitator plays a key role here in being aware of how each community is reacting to this realisation. Some communities may play on regardless or some communities may express concern about the existing inequities and decide to redistribute health units amongst members in some way. In the latter case, the facilitator should encourage this process of action. In the former, it is at the facilitator's discretion to either not interfere or to gently suggest that the community could do something to make the process more equitable.

- When each community has auctioned all list items, participants do Procedure 5 (Debriefing) which culminates in each community giving a report of 'happenings' to the larger group.
- As a whole group, discuss how this simulation game reflects some of the fundamental principles for achieving health for various people and communities at local, national and global levels. OHT 7 may be useful at this point to either guide or reinforce this discussion.

The following points of analysis may also be useful in linking the experiences of the game (column A) with the various points on OHT 7 (column B):

A	B
When going health shopping it is difficult to prioritise/compromise on the items because they all seem essential to health.	1,2,3
Some people receive more health units than others. The number of health units a person initially receives is not determined by the individual.	4,6
Those people with less health units have much reduced opportunity to get the things that promote health.	5
The more health units a person has, the greater amount of control and power they have, not only over their own opportunities for health, but over that of others.	6,7
People with only a few health units may find it difficult to convince some people with many health units to give some of them away or to make lower bids. They may feel powerless and alienated.	6
It is only with the redistribution of health units between members of the community that everyone can achieve at least an average standard for all list items.	7
The redistribution of health units requires the people with many health units to agree to give up some of their units to those who have less and to compromise on standard on several/all list items.	7
When some people discover that not everyone in the community is able to achieve even a poor standard for each list item, there can be a strong sense of injustice and urge to make things fair.	1

- In conclusion, indicate that the following workshop component (7) will explore how re-oriented government policy combined with community development processes can address health inequities so that health can be achieved for all.

7. Mini-lecture: The Nature of Community Development

This mini-lecture focuses on three themes:

- the role of governments and communities at all levels in working towards the health of all;
- the potential of community development for addressing community issues;
- a range of strategies for the development of communities.

- Illustrate historically that there has been significant international recognition by groups such as the World Health Organisation and United Nations that there is an urgent need for action to address the inequalities in health of the people between and within countries. OHT 8 indicates three historical milestones.
- Focus on the five strategies listed from the Ottawa Charter (OHT 8).

Some explanation of each of the five strategies may include the following points:

Building Healthy Public Policy

- including health as a major consideration in all policies and legislation (e.g. transport, environment, housing, education, social services) because they all influence health;
- building cooperation of all governments and policy makers across all sectors

and at all levels to consider the health consequences of their decisions and to accept their responsibilities for health.

Create Supportive Environments

- building responsibility of all nations, regions, communities and individuals to take care of each other and their natural environments;
- conserving natural resources and protecting natural and built environments;
- generating safe, satisfying and enjoyable living and working conditions;
- supporting healthy lifestyles.

Strengthen Community Action

- empowering communities;
- strengthening public participation and community ownership and control over the direction of health matters;
- providing full access to information, funding and support.

Develop Personal Skills

- supporting personal and social development;
- providing information, education and enhancing life skills.

Re-orient Health Services

- broadening the role of health services from being authoritative and individualistic to shared responsibilities and partnerships for health, and shifting from a dominant clinical and curative orientation to one that emphasises prevention with a focus on the social, political, economic and environmental components connected to health.

Highlight that these strategies involve the cooperative and joint efforts of governments and communities to promote health for all. In particular, note that strategies 3 and 4 have a strong focus on community development. Therefore, community development must be regarded as an important process for achieving health.

- Display OHTs 9A & B and discuss the specific nature of community development and its associated strategies.

8. Community Development Case-Studies

In this activity, participants work in small groups to discuss and analyse a series of case-studies of community development.

- Divide participants into small groups of 3-4 people each. Each group is to receive a case-study of community development to read, discuss and analyse. Resources 7, 8, 9 and 10 provide possible case-studies for exploration. Workshop facilitators and participants are encouraged to substitute these for case-studies of their own selection which represent specific interest areas or local/national contexts. Case-studies may describe community development in a variety of settings such as the neighbourhood, workplace, school, village, city.
- Each small group reads their chosen/allocated case-study and then collectively answers the four key questions listed in OHT 10 about the case-study.
- A brief feedback session based on the five key questions may take one of several forms:
  - each small group reporting back to the whole group; or

- two small groups which each looked at a different case-study, reporting to each other; or
- small groups which looked at the same case-study, comparing responses and discussing reactions.

9. Debriefing Activity: Concept Mapping

This activity reviews the key workshop themes by helping each participant draw a concept map.

- Display OHT 11 and review the key workshop themes or concepts. Discuss as required.
- In pairs or individually, participants develop a concept map of the key themes on a blank sheet of paper. The concept map should reflect their understandings and appreciations of the meanings of the concepts, including how they are interconnected. Participants should be encouraged to be as free and creative as they like in their construction of the concept map.
- Participants may share completed concept maps with others and discuss reasons for particular mapping forms.

Two examples of a personal concept map are provided on OHTs 12 and 13.

10. For Consideration: Five Educations? One Education?

This final section aims to relate the experiences of the workshop to the context of development and environmental education. Given this workshop's detailed exploration of the complex links between the well-being of people, populations and nature, the educational implications are many. To consider these implications:

- Refer to Resource 3 (Four Educations? One Education?) and OHT 3 (An Easy Puzzle) in the module *Exploring the Links - Environment and Development*. Discuss briefly why the different types of educations are 'Complementary, interdependent and mutually illuminating'.
- Discuss if/how/why health education could form a fifth arm to the diagram in Resource 3, thus suggesting the title 'Five Educations? One Education?'
- Design this fifth arm for the diagram in Resource 3, describing health education in its narrow and broad sense.
- Reconstruct the question on OHT 3 to also include health education and discuss.

11. Evaluation: Tea Party Revisited

The workshop concludes with a second tea party (Activity 2). It helps participants to review their personal developments in learning as a result of the workshop.

Using the same resource and process as for the tea party (Activity 2), participants 'revisit' each question and discuss how (or if) their understandings of the related issues have changed or developed as a result of the workshop activities.

As well as participants reviewing their own personal developments in learning through this evaluation activity, the workshop leader can gain insight into the effectiveness of the workshop in achieving its aims and objectives.

OHT's

OHT 1

Workshop Questions and Objectives

The Issue

Health and Community Development

Key Questions

1. What is health?
2. How is health achieved?
3. Who achieves health?

Objectives

For participants to:

A. develop a broad understanding of the nature of health

B. examine the links between healthy people, healthy communities and healthy natural environments

C. consider the issues of sustainability, social justice and equity as they relate to achieving health for all

D. consider the process of community development as it contributes to healthy people, healthy communities and healthy natural environments.

E. consider the links between environmental education, development education and health education

OHT 2

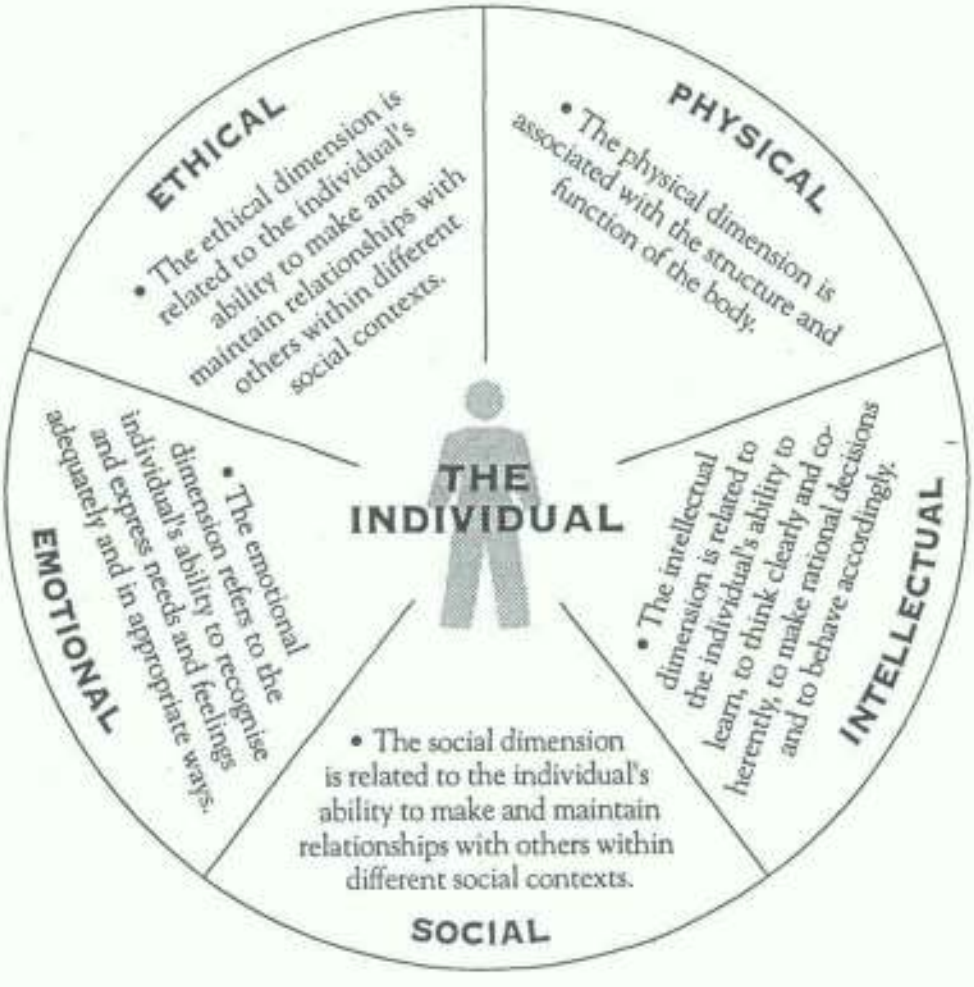
A New View of Health

Old / Narrow	New/Broader
1. Health is the absence of disease or illness. It is a medical concern.	Health is also a positive concept of well-being and balance and is a resource for everyday living. It is also a social and personal concern.
2. Health has to do with physical well-being of the body's structure and function.	Health is also to do with social, emotional, intellectual and ethical well-being.
3. Health is to do with the well-being of individuals.	Health is also to do with the well-being of communities and natural environments at local, national and global levels.
4. It is the responsibility of the individual for his/her own health.	It is also the responsibility of individuals, communities, governments and entire societies to help others achieve health.
5. Health is dependent on the personal lifestyle choices which an individual makes.	Health is also dependent on a range of social and ecological factors.

OHT 3

Basic characteristics:

- a dynamic and sustainable state of physical, intellectual, social, emotional, and ethical well-being
- each person is multi-dimensional and each dimension contributes to the total health of the whole person
- levels of well-being in each dimension are interdependent, constantly changing and interacting



OHT'S

OHT 4

Basic characteristics:

- a dynamic and sustainable state of physical, intellectual, social, emotional and ethical well-being
- communities are multi-dimensional and each dimension contributes to the total health of the community
- levels of well-being in each dimension are interdependent, constantly changing and interacting

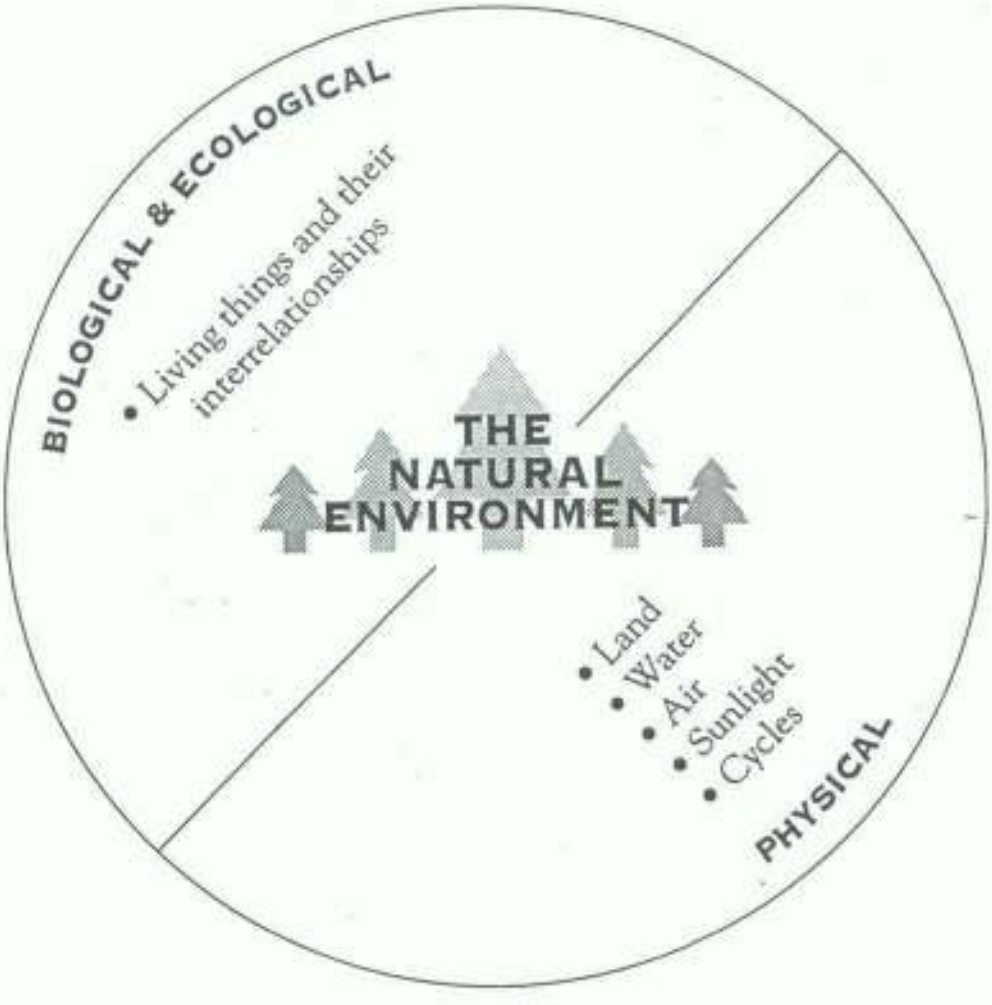


OHT 5

HEALTHY NATURAL ENVIRONMENTS

Basic characteristics:

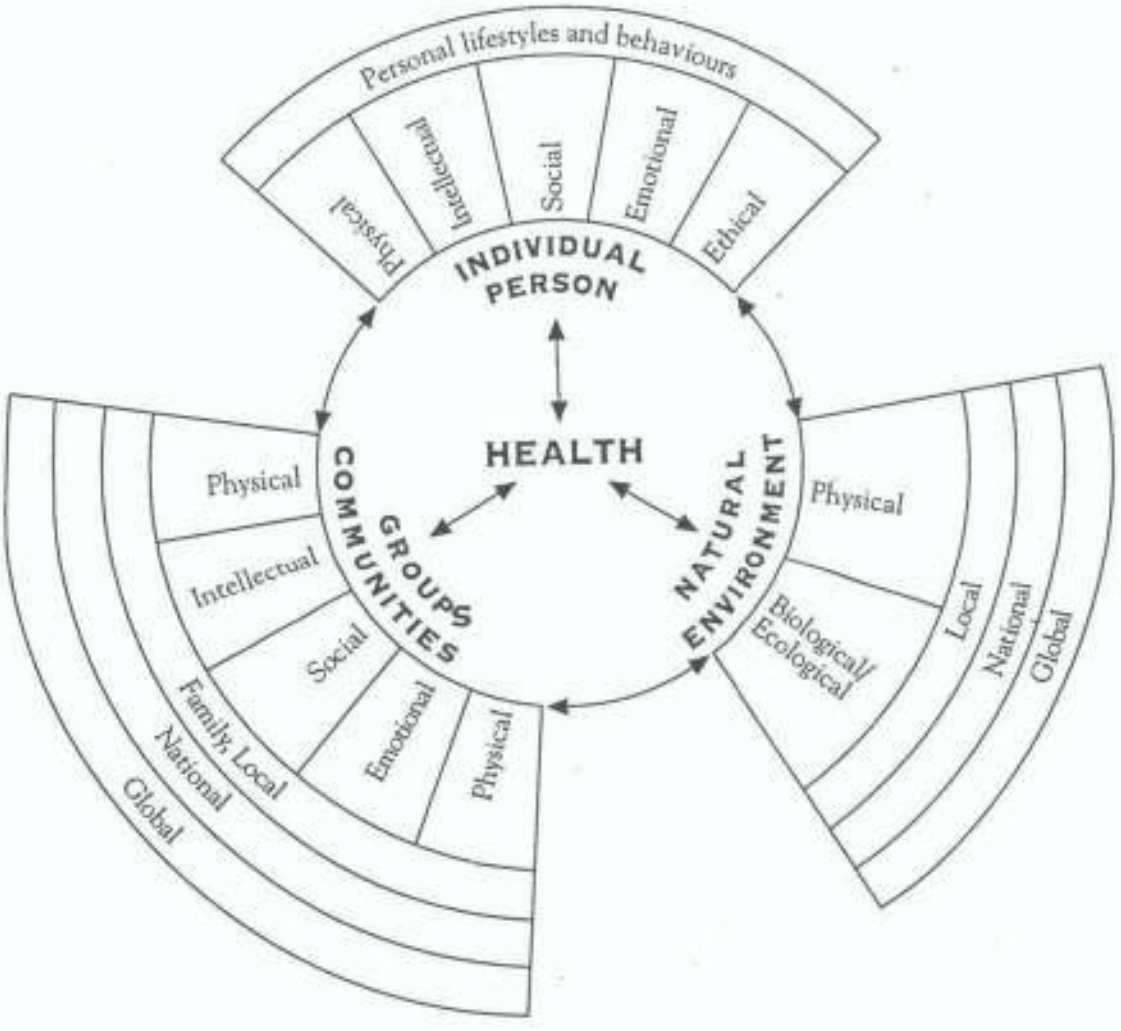
- a dynamic and sustainable state of ecological well-being
- natural environments are made up of various elements, systems and processes, all of which are interdependent, changing and interacting



OHT'S

OHT 6

The health of people, the health of communities and the health of natural environments are inextricably linked. Health is multi-dimensional and interrelated, requiring a balance of all dimensions.



OHT's

OHT 7A

Reflections of Fundamental Principles

1. Health is a **fundamental right** for all people, communities and environments.

2. Health is **multi-dimensional** and **interconnected.**

3. To achieve health means **much more** than people having access to medical health services and making healthy lifestyle choices.

4. **Health status** is determined just as much by social, economic and environmental factors as by individual health and lifestyle choices and medical advances.

5. When it comes to achieving health, some people and communities are disadvantaged due to **inequitable access** to the resources and conditions that promote health.

   Opportunities for the health of people and communities at local, national and global levels are distributed unequally according to factors such as:

   - the socio-economic status (income, education, occupation)
   - social support structures
   - the degree of control, power and autonomy
   - age
   - gender
   - geography
   - culture and language

OHT's

OHT 7B

6. Reduced access to health resources and conditions by disadvantaged people/communities (e.g. rural populations, women, aged, lower socio-economic groups/countries, indigenous people) can be explained more by social, economic and political reasons than by individual's actions. The causes of **reduced health** are generally out of the individual's control.

7. Health for all is achieved when an **equitable distribution** of health resources and conditions occurs.

   This means:

   - **justice,**
   - **equity,** and
   - **sustainability**
   - for all people, communities and natural environments.

OHT 8

Some Major Milestones

1978

THE DECLARATION OF ALMA ATA

World Health Organisation and United Nations

- declared 'that the health status of hundreds of millions of people in the world today is unacceptable' and called for an equal distribution of health resources so as to 'attain a level of health for all citizens of the world that would permit them to lead a socially and economically productive life'.

1979

GLOBAL STRATEGY FOR HEALTH FOR ALL BY THE YEAR 2000

World Health Organisation

- focussed attention on the inequalities in health and stated a goal of 'bringing health within the reach of everyone... including the remotest part of the country and the poorest members of society'.

1986

OTTAWA CHARTER FOR HEALTH PROMOTION

World Health Organisation

- listed five major strategies for promoting health for all:
  - build healthy public policy
  - create supportive environments
  - strengthen community action
  - develop personal skills
  - re-orient health services

OHT'S

OHT 9A

Some basic aims

- a society (local, national and global) more sharing of its resources
- sustainability (for people and environments) with peace and justice
- decentralisation of decision-making
- devolution of power to communities
- people and communities with the strength, confidence, skills, consciousness and collective spirit to have maximum control over the circumstances of their lives
- genuine responsibility, initiative, decision-making and self-reliance at the community level

Some general aspects

Source: Bill Lee, quoted in Butler, P. (1992) Reflections on 'Good' Community Development, *Community Quarterly*, No.24, September.

- Involvement in struggle

  People actively making decisions and taking action to bring about change
- Community sense

  Building a strong sense of belonging to a community
- Organisation development

  Building and improving organisations which provide a basis for action
- Concrete benefit

  Something real and tangible happens
- Learning

  People acquiring new skills
- Fundamental social change

  The altering of some basic institution or institutional relationship to improve the lives of participants

OHT 9B

Some practical strategies

- collective decision-making
- collective action
- consensus building
- personal development
- small group development
- sharing experiences
- developing trust and communication
- raising critical awareness of the issue
- developing intellectual and moral commitment to the issue
- non-violent protest
- pressure groups
- community research
- public meetings
- public exposure of the issue
- self-support services
- networking people and resources
- identifying problems
- prioritising concerns and actions
- self-help groups
- skill development
- community projects
- cooperatives

OHT's

OHT 10

Case-Study Questions

1. What are the **community problems/issues?**

2. What did the community do to address their problems? List the range of **strategies or actions** used.

3. What were the **outcomes** (positive, negative, short term, long term) for the community as a result of the process?

4. Which of Lee's **aspects** of community development does this case-study reflect? (see OHT 9A)

5. What are your **personal reactions** to the community development process illustrated in this case-study?

OHT 11

Workshop Themes

Health

People and Community

Environment

Interconnectedness

Social Justice

Equity

Sustainability

Community Development

Participation

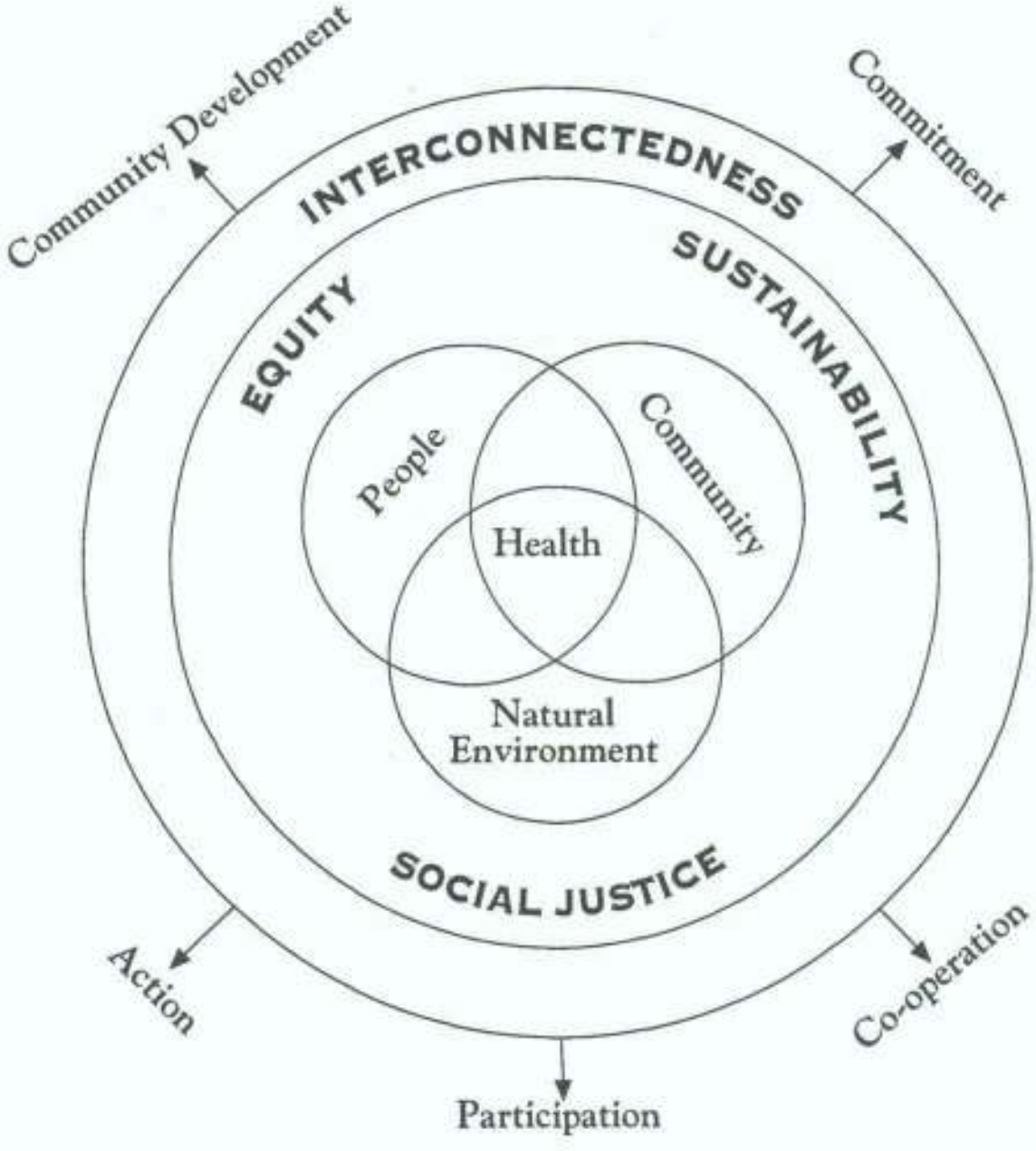
Action

Cooperation

Commitment

OHT 12

PERSONAL CONCEPT MAP A



OHT'S

OHT 13

PERSONAL CONCEPT MAP B



=

INTERCONNECTEDNESS
COMMUNITY DEVELOPMENT

- Commitment
- Co-operation
- Participation
- Action

RESOURCE 1

TEA PARTY

1. Some things that make me healthy are _____

_____

2. Some things that make me unhealthy are _____

_____

3. Some things that make a healthy community are _____

_____

4. If I was to define 'health' I would say it is _____

_____

5. I think one of the most serious health problems that confront humankind today is _____

_____ because _____

_____

6. Some people are more healthy than others because _____

_____

7. To achieve health for all people it is vital that communities and governments work towards _____

_____ because _____

_____

8. Some things shared between environmental education, development education and health education are

_____

_____

RESOURCE 2

CARD LABELS FOR 'WOOLLY HEALTH WEB'

The physical health of the natural environment
(land, water, air, sunlight, cycles)

The bio-ecological health of the natural environment
(living things and their interrelationships)

The physical health of the community

(the human-made structures - houses, buildings, roads, cities, parks, farms - and their functions for the community)

The social-emotional health of the community
(social relationships, community cohesion, communication systems, support and guidance, welfare, cultural patterns, economic and political systems, social feelings, group emotions, community belonging)

The intellectual-cultural-ethical health of the community
(education, learning and decision-making systems; societal values, beliefs, morality, spirituality)

The physical health of the individual

(the structure and function of the body)

The social-emotional health of the individual
(the ability to make and maintain relationships with others, to recognise and express needs and feelings to self and others)

The intellectual-spiritual-ethical health of the individual
(the ability to learn, think, make rational decisions, critique; the development of values, beliefs and principles of morality)

RESOURCE 3

MAKING THE LINKS: NEGOTIATING AND RECORDING SHEET FOR 'WOOLLY HEALTH WEB'

HEALTH COMPONENT	YOUR LINK
The physical health of the natural environment	
The bio-ecological health of the natural environment	
The physical health of the community	
The social-emotional health of the community	
The intellectual-cultural-ethical health of the community	
The physical health of the individual	
The social-emotional health of the individual	
The intellectual-spiritual-ethical health of the individual	

RESOURCE 4

YOUR HEALTH SHOPPING LIST

		Item	Standard	Health Units
1.	—	**Housing** - space, safety, warmth, security, amenities, aesthetics, hygiene, location	excellent average poor	
2.	—	**Work and Employment** - occupation safety, job security, work satisfaction, autonomy, hygiene, job opportunities, working hours, sick and holiday benefits, social interaction	excellent average poor	
3.	—	**Environmental Surroundings (natural and built)** - aesthetics, levels of pollution, location, safety, sense of place, space, design, ecological diversity and balance	excellent average poor	
4.	—	**Sense of Family/Community** - belonging, communication, support, understanding, acceptance, cohesion, networks, relationships, autonomy and control	excellent average poor	
5.	—	**Clothing** - warmth, protection, variety, availability and access	excellent average poor	
6.	—	**Food and Nutrition** - quality, quantity, variety, availability and access	excellent average poor	
7.	—	**Education** - relevance, quantity, quality, availability and access	excellent average poor	
8.	—	**Recreation, Leisure, Fitness** - availability and access, quantity, quality	excellent average poor	
9.	—	**Health Care/Medical Services** - availability and access, quality, quantity, relevance.	excellent average poor	

RESOURCE 5

LET'S GO HEALTH SHOPPING: THE GAME

Aim of the Game:

(a) To be as healthy as you can

(b) To use up all your health units

Procedure:

Prioritising

1. Consider how important you regard each item on the shopping list as contributing to your health. Using the left top box, tick those items that you regard as absolutely essential and would not compromise on standard. Cross those items that you would compromise on standard if you had to.

Counting

2. Find out how many health units you have by opening your envelope and looking on the inside flap. Keep this amount to yourself at least until step 4.

Allocating

3. Allocate all your health units to the items on your shopping list and record them in the left bottom box. Your allocation of health units should indicate the level of importance with which you regard each item as contributing to your health. One health unit is the lowest value when buying an item but you can choose to allocate zero units to an item if you wish. These allocations can act as a guide for bidding in the auction. You may change these allocations at any time.

Auctioning

4. Form your community of six people. As a group, work sequentially through the shopping list, item by item, as you auction off the purchase of excellent, average and poor standards. For each item, each person in the community has a turn to bid how many units they are willing to pay for the excellent standard. The item at excellent standard goes for the highest bid each time. More than one person may buy at a time as long as they all buy for the same highest amount. The highest bid for 'excellent' now sets the unit price for 'average' and 'poor' standard. Refer to the auctioning table (Resource 6) to identify consequent prices. Those who do not purchase 'excellent' standard can elect to buy either 'average' or 'poor' at the set price. When an item is purchased each person should record the payment in the health units box at the right of the sheet. Then, put the correct number of units into the centre of the community, and inform the community of the standard you have purchased.

Debriefing

5. When the game is finished, as a community write down five major 'happenings' in the activity. These happenings may recount such things as community feelings, actions taken by all or some of the members, final health profiles of each community member, agreements/disagreements/pacts that occurred. Report these five happenings to the whole group.

RESOURCE 6

LET'S GO HEALTH SHOPPING: AUCTIONING TABLE

The highest bid for 'excellent'	Consequent Prices	
	for 'average'	for 'poor'
8	5	1
7	4	1
6	3	1
5	3	1
4	2	1
3	2	1
2	1	0
1	0	0

RESOURCE 7

CASE-STUDY 1 COMMUNITY HEALTH AND ENVIRONMENTAL ACTION

Authors: Clark Shuttleworth and Lesley Shore

Source: This case study is used with the kind permission of the Centre for Development and Innovation in Health Project, 230 High Street, Northcote 3071. It has been extracted from *Community Development in Health: A Resources Collection*, Community Development in Health Project, District Health Councils Programme, Victoria, November 1988.

This case study of environmental action is a study on the fragile nature of community development. It's a study from which we can learn a great deal.

A community concerned about the effects of living with heavy industry in their midst was angry and frustrated. In this context, the Dale Street Women's Health Centre managed to facilitate the development of a self-help action group. The group served to affirm the residents' concerns, giving them legitimacy and hope, and thus, gradually overcoming their sense of isolation and powerlessness. However, as the self-help group strengthened, tensions developed between it and the Centre.

Whilst the involvement of a women's health centre in local environmental issues is itself of interest, the real lessons emerging from this experience relate to the delicate tasks of building trust and handing power to the community.

INTRODUCTION

The Dale Street Women's Health Centre became active in the environmental concerns of the LeFevre Peninsula, Port Adelaide, in 1986. Although, traditionally, women's health concerns have not included environmental-related issues, the staff of the Centre on the LeFevre Peninsula strongly suspected that the nature and extent of the area's health problems were related to environmental factors. Thus, we as workers at the Centre, set out to work with the Peninsula residents in a community development framework to address the area's environmental health problems. This experience resulted in varying levels of success for the residents and workers, as well as some important lessons for all.

THE AREA

The LeFevre Peninsula is a mixed industrial and residential area, bounded by the sea to the west and the Port River to the east. The people in the area live, work and play right alongside heavy industry. It is by no means a wealthy area and includes a fair amount of public housing. Many residents own their own houses, which despite their average incomes, are homes that they are proud of. Many of these houses are located close to a chemical production area, where some relatively nasty, toxic substances are produced. There is a lot of heavy traffic going through the area - both trucks and railway; and a lot of noise, smells and pollution. For years residents have complained about this situation.

"...THESE HOUSES RE LOCATED CLOSE TO A HEMICAL PRODUCTION REA, WHERE SOME RELA-IVELY NASTY, TOXIC SUB-TANCES ARE PRODUCED."

In 1985 and 1986, there were two serious chemical spillages: copper chromium arsenate[1] was spilt into the Port River at Gillman and one tonne of chlorine gas was leaked into the atmosphere at Osborne. There was widespread alarm amongst residents, the local fishing industry and environmentalists. The attitude of the companies and Government departments was that it had been the choice of residents to remain in the area. Of course, the reality is not that clear cut, as some have said:

"Why should we have to move when all we want is a safe living environment."[2]

Although these incidents highlighted the situation, the underlying uneasiness of the residents about the presence of toxic industry had been with them for years. Their concerns about the threat to their family's health, fuelled by the ever present reminder of chemical smells and the unrelenting stress of a continuous flow of heavy traffic, were robbing them of their right to create for themselves the home life they desired.

"...THEIR FAILURE..TURNED THEIR ANGER INTO FEELINGS OF DEFEAT AND DEPRESSION..."

They were angry, but their failure to bring about change - or even to gain some recognition for the legitimacy of their concerns - had turned their anger into feelings of defeat and depression about the whole situation. Hope had long since been replaced by scepticism and suspicion.

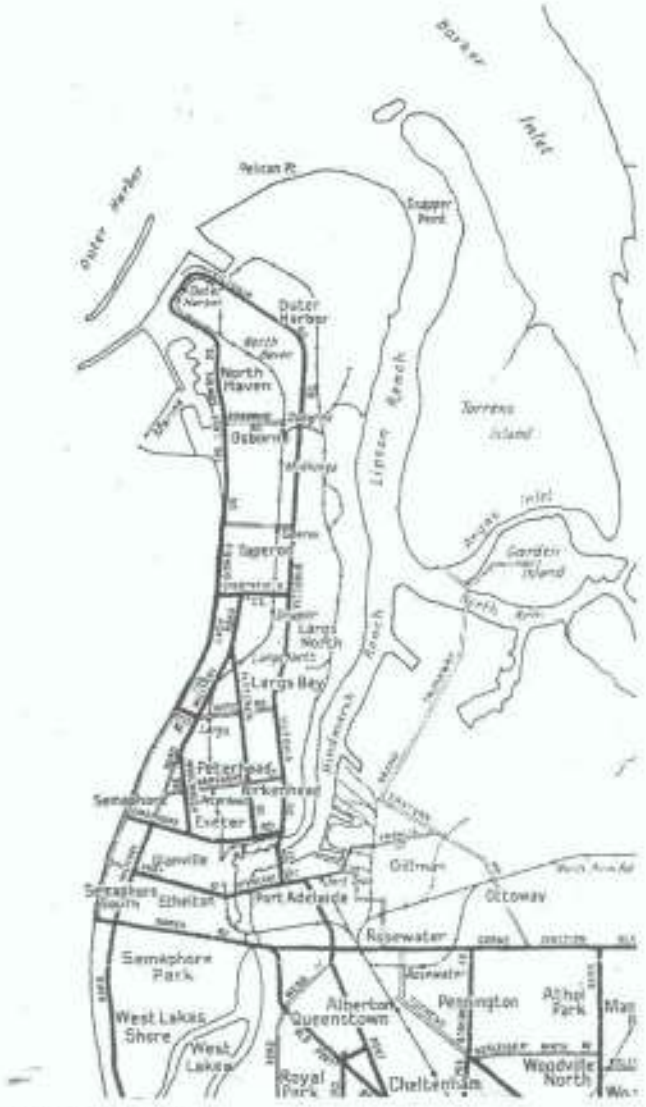
INVOLVEMENT OF THE CENTRE

It was in this context that the Dale Street Women's Health Centre became active. We became involved in this local issue for three reasons:

a) several of the Centre's workers lived in near-by areas and were, themselves, members of a community-based 'environmental health group' which was concerned about what was going on.

b) A journalist, who had been covering the chemical spills in the area over the years, had been in contact with the residents and was genuinely concerned about their well-being. He urged us to do something.

c) We had observed, from the women clients visiting the Centre, an unusally high incidence of respiratory problems, such as asthma and ear, nose and



throat complaints.

Thus we took up the challenge! Our suspicions of the prevalence of respiratory and bronchial symptoms have since been verified by statistical evidence [3].

"We had observed an unusually high incidence of respiratory problems..."

Initially, we visited three key families to whom the journalist had spoken. These families lived in the same street and knew one another - they seemed to be prepared to take action and knew others in their neighbourhood whom they could mobilise. Eight families soon became involved. These people were not 'seasoned activists', but had the time and the motivation to take action. They included, mothers who were at home during the day and some men who were off work on workers' compensation: their lives and their family's lives had been strongly affected by the presence of toxic industry.

As staff at the Centre, we had a great deal of autonomy in setting our own priorities, so in February 1987 we decided to initiate a short-term, small-scale project, which specifically aimed at investigating the extent of problems in the area, and to find out whether there was any action that the Health Centre could take. As with all project proposals, we took this proposal to the management committee who approved the project, and as the Centre had made a small saving in the previous year due to a worker taking leave without pay, we were able to employ someone on this project for 20 hour/week for 3 months.

"The worker drew together a group of concerned residents who decided to call themselves Help..."

We went back to the residents with this offer of assistance and left it to them as to who among them would be employed. They chose a local person who lived in the Osborne area, and who had previously been involved in attempts to tackle the industrial pollution. Her brief was firstly, to gauge the extent of the health problems, both physical and emotional, and secondly, to develop some strategies for dealing with them.

The worker drew together a group of concerned residents who decided to call themselves HELP ('Health in the Environment of LeFevre Peninsula'). Together, they devised a questionnaire on environmental health problems in the area. The questionnaire was based on the group's own experience of problems, and included the issues which they felt were most important to residents of the area. Using this approach provided the opportunity for the worker and for HELP to listen to some real stories about the residents' experiences, as well as raising consciousness about environmental concerns. A random selection of 120 households were surveyed, with 115 questionnaires being completed.

The results of the questionnaire were fairly dramatic, suggesting a disturbingly high level of health problems in the community, particularly, respiratory problems. Many respondents mentioned the fact that some, or all family members and neighbours were affected. There was a mixture of acute and chronic health problems, including: acute responses to accidental exposure to gas and dust waste; and chronic problems like sinus, asthma and bronchitis. Only 7 of the 115 respondents said there were no health problems in relation to the environment. One respondent to the questionnaire clearly summed up the situation:

"The results...were fairly dramatic...Many respondents mentioned the fact that some, or all family members and neighbours were affected."

"Sometimes living here's like being in the movie 'silkwood' only you're not acting, it's for real."[4]

FOLLOW-UP ACTION

HELP called a public meeting to present the findings of their survey[5]; it was a very successful meeting

and it enabled a much wider cross-section of residents to have their say. This meeting, and the survey results, really set the ball rolling. It led to a lot of public exposure for the HELP group and, eventually, to Port Adelaide being included in the Environmental Health Management Plan, which the Health Commission in South Australia is currently piloting.

"...COMPLAINTS BY INDIVIDUALS NEVER SEEMED TO BE GIVEN LEGITIMACY."

Previously, long-term residents had experienced a sense of isolation - complaints by individuals never seemed to be given legitimacy. When someone rang to report a strong smell of chlorine, the Department of the Environment would respond with: "No-one else has rung". In taking group action however, HELP provided residents with much needed support and the opportunity to build confidence. As a group with a name, doors opened which had previously been closed to the residents as individuals.

"THEIR ISOLATION AND SENSE OF POWERLESSNESS WERE REPLACED BY A RENEWED HOPE THAT SOMETHING COULD AND WOULD, AFTER ALL, BE DONE."

The public meeting generated a tremendous level of enthusiasm - for the first time the residents' fears were given credence. The survey results, together with the attendance at the meeting, the exposure in the media and the response of the Government showed that their concerns were valid. Their isolation and sense of powerlessness were replaced by a renewed hope that something could and would, after all, be done.

THE RELATIONSHIP BETWEEN THE CENTRE AND HELP

From the start, we had envisaged our involvement as being short-term: as with any community development project, the workers must eventually withdraw. We planned to scale down our involvement after the public meeting, that is, we aimed to retain our support and commitment for HELP while becoming less active. Several issues arose however, which led us to withdraw our involvement sooner than expected, and leave the campaigning in the hands of the HELP group. These issues were related to the history of the area, the residents' perception of 'professionals', the way the HELP group developed and differing priorities and concerns. We have spent many hours reflecting and discussing these issues and the experiences and lessons learned from them. Our discussions raise important points for consideration by workers in community development.

THE ISSUES

One important issue which we faced was a growing suspicion of the Health Centre workers by local residents - suspicion to the extent of being perceived as spies and bureaucrats. This was very difficult to deal with. In fact, the group had become suspicious of any outsiders - with the exception of a few - who took an interest in their activities.

We had employed a worker from the residents' group and, although this gave the project a lot of momentum, it also caused confusion for the worker. Her 'split loyalties' may have contributed to the problems that we experienced in maintaining co-operation between the Centre and HELP.

Underlying the residents' suspicions seems to have been the inevitable perception of an imbalance of power and access to information, which often surrounds paid workers working with the community. As workers, we felt that one of the most important processes which had been developed was the sharing of information between HELP and the Centre. It came to the point however, that they could not continue to share their information. It was at this particular point that we discovered our relationship with the group was on 'shaky ground'. We had wanted to borrow HELP's records (newspaper cuttings, letters and such) to prepare a paper on the role of lobby groups in health and were refused. When we confronted the group with this issue of information sharing, the group revealed its lack of trust in the workers and consensus could not be reached. HELP's reluctance to share information was due to their fears of being 'taken over' and being used for our 'greater glory'.

"UNDERLYING THE RESIDENT'S SUSPICIONS SEEMS TO HAVE BEEN THE INEVITABLE PERCEPTION OF AN IMBALANCE OF POWER..."

These experiences reinforced for us the important step of establishing group norms in the process of building group cohesiveness and group development. Group norms need to be established around such issues as: information sharing; allowing each person to speak; respecting individual opinions and confronting individuals who do not respect these norms.

As previously mentioned, the local residents were very sensitive to potential professional exploitation of themselves and their experiences. Our experiences with the group has shown that sometimes people think in terms of: "What's in it for the worker?"; "Are we (residents) to feature in some research for a curriculum vitae?" We tried to avoid this attitude by getting to know key people in the community, gaining their trust and creating an 'in' into the community. Professionalism and the professional's training can get in the way - sometimes it's necessary to throw out ideas on how things should be done, such as how a meeting should be run, as it doesn't always apply. Status, positions and titles can be a block to co-operation. To work in a community development style, it is important to be prepared to hand over power - a

problem if one is too bound up in the issue and cannot bear to do oneself out of a job. In our experience, clarity of personal and professional reasons for involvement from the outset is essential.

Another issue which we had to confront was one of different priorities in health care. For example, in talking with residents about health problems, it was not hard for us (as health workers) to go off at a tangent about the epidemiology[6] of health problems in the area; whereas the residents' priorities were understandably focussed around what affected their lives - the daily grind of indifference in a noisy, dusty environment.

Similarly, another issue was deciding on the priority of concerns. For people in the HELP group, concerns were varied and everyone had different agendas: for one, it was the truck going past, for another, it was one particular factory that was the problem. The Centre wanted to take a broader view and to pursue, for example, legislation or an Environmental Health Management Plan (a topic being discussed at the time in the Health Commission), and also to have an Environmental Health Worker employed for the whole area. However, this was difficult for the group to accommodate. It was essential, therefore, to do something about the noise, the dust and the trucks at the same time as taking on the broader issues. These priorities clearly demonstrated to us that there was a need to tackle the residents' environmental health problems at different levels.

"...ANOTHER ISSUE WAS DECIDING ON THE PRIORITY OF CONCERNS."

Linked to this issue of different priorities was the issue of different political perspectives. Under this heading would come - fear of the feminist cause. Although the Centre is well accepted and established in the Port region, as a Women's Health Centre we still experience some resistance. Some people could not conceive of working with the Centre. As happens in most community development projects, one finds oneself working with people with whom one would not usually be working. To have an agency, especially a women's health agency, involved in a residents' group can cause problems, especially as women's health has not traditionally included environmental health. The Centre considered it to be quite justifiable to take a social view of health, especially considering the number of women who live in the area.

"IT WAS ESSENTIAL, THEREFORE, TO DO SOMETHING ABOUT THE NOISE, THE DUST AND THE TRUCKS AT THE SAME TIME AS TAKING ON THE BROADER ISSUES."

In addition, we felt that we may have fallen into conflict with the Health Commission if we had needed to criticise their inaction. We feared that such criticism of our funding body might have jeopardised the security of our funding. We also feared that it would have been difficult to justify our involvement: our experience of community development work is that it is not quantifiable in bureaucratic Health Commission terms. Such a project as this is not measurable by the number of heads through the door or clients on statistical sheets. These accountability and evaluation problems are common in community health where resources are small and demand for one-to-one involvement is high.

"...ADVOCACY, DIRECT ACTION AND GROUP BUILDING PROCESSES SHOULD ALL BE EQUAL ASPECTS OF OUR WORK."

We have since discovered that our fears were, in fact, quite unfounded - the Health Commission would have been quite open to criticism and accepting of a community development approach!

Defining outcomes, and evaluating what has been achieved and for whom, was certainly a difficult issue. Especially in the context of the question: "Evaluation for whom?" - the residents? Government? Changes in the environment? Rates of occurrence of illness? And so forth. From the perspective of the residents it might be that nothing has changed:

"The trucks still go past and there is still ash settling over my car and my trees are still dying".[7]

The overall lesson is that there is no single priority or outcome; and for us as workers especially, the advocacy, direct action and group building processes should all be equal aspects of our work.

IN SUMMARY

The long-term inaction regarding their urgent problems - dust on cars, noise levels and so forth - has created a siege mentality in many of the residents, which led to the breakdown of co-operation and information sharing with the Centre. This breakdown has become a major issue - especially for the workers at the Centre. HELP is currently at a precarious stage, but in terms of community development, such a stage in the life of a group may represent a crisis or it may be part of the process of a group gaining independence and consolidation.

Our involvement in this ongoing environmental issue has had many positive outcomes. A self-help group has developed which has provided mutual support and legitimacy for the residents - it has given them a voice and, to some degree, a certain sense of power. Residents' concerns have gained recognition at Government levels and their neighbourhoods have been included in the proposed Environmental Health Management Plan.

The Environmental Health Management Plan has not only had involvement from us, but also from HELP and another environment group. So the Plan

has direct 'consumer' involvement and retains a resident focus.

"(THE) SELF-HELP GROUP HAS ...PROVIDED MUTUAL SUPPORT AND LEGITIMACY FOR THE RESIDENTS – IT HAS GIVEN THEM A VOICE AND, TO SOME DEGREE, A CERTAIN SENSE OF POWER."

Finally, as workers, we have learned some valuable lessons about the processes of community development.

Dale Street will continue to be involved in the area of environmental health, as it is something to which the Women's Health Centre has a commitment. So much momentum has gathered, it would be a pity to lose it.

FOOTNOTES

1. Copper chromium arsenate is a chemical used to preserve wood, for example in the treatment of pine for fences. It is quite deadly and Port River, where it was spilt, is a vital breeding ground for both fish and sea birds.

2. Quote taken from the Residents' survey conducted in Osborne, Taperoo, North Haven and Largs North suburbs on the LeFevre Peninsula, during April - May 1987, by the Dale Street Centre worker and the HELP group.

3. See: South Australian Health Commission, Epidemiology Branch, "Respiratory Conditions Among Residents of the LeFevre Peninsula", draft only, December 1987.

4. As per (2) above.

5. The subsequent report written was entitled, If You Don't Like It, Move!, A Preliminary Environmental Health Survey of the Northern LeFevre Peninsula, by the HELP group, June 1987.

6. Epidemiology - history of a 'disease'(s) or epidemic which is prevalent in a community at a specific time.

7. Quote from survey - as per 3 and 4 above.

Skills which are essential for the perfect Community Development Worker!

1. To be in touch and able to listen to the community.

2. To be able to pick one's way through the bureaucracy and avoid being knifed or swallowed up in the process.

3. To know how not to get lost in the local concerns and to keep a broader view.

4. To have heaps of contacts.

5. To be 'thick skinned' but still be sensitive to people.

6. To be clear about what one can do and what one cannot do.

7. The ability to, not only have these skills, but to be able to teach them as well.

8. Group skills - skills in handling difficult people.

9. Gallons of gall.

10. The ability to gain credibility and legitimacy.

11. To have a political and philosophical framework worked out beforehand.

12. To be flexible; to be able to throw all the rest out of the window when need be.

13. To write excellent submissions.

14. To know people in the local press and to be able to get articles in even though the deadline is long past. Plus other media skills, for instance - one needs to know what to do when the "7.30 Report" rings up and needs an opinion on the spot.

15. Last and most important, is that one has to be able to identify any of these skills in someone else so that they can start doing them when exhaustion sets in. Which leads to the last point - enthusiasm can be a real problem - wanting to race away, but having to lasoo oneself and hold back.

Clare Shuttleworth has been involved in community action on industrial and environmental health issues as both a resident and worker in Port Adelaide. Clare is currently Co-ordinator of the Dale Street Women's Health Centre.

Lesley Shorne works as a Medical Officer at the Dale Street Women's Health Centre. Amongst other issues, Lesley has worked on a primary health care approach to environmental problems - this social view of health involves looking at the total person: where they live and work, as well as their physical symptoms.

RESOURCE 8

CASE-STUDY 2: HEALTH IN A SOCIAL AND CULTURAL CONTEXT

Author: Joan Vickery

Source: This case study is used with the kind permission of the Centre for Development and Innovation in Health Project, 230 High Street, Northcote 3071. It has been extracted from *Community Development in Health: A Resources Collection*, Community Development in Health Project, District Health Councils Programme, Victoria, November 1988.

This case study follows the development of a series of camps for Koories with diabetes, which addressed the problem of diabetes in a 'caring' framework.

The camps aimed to tackle health in a social and cultural context. They were held in a rural setting and the key features of their success were the involvement of family members as well as those with diabetes; and the emphasis on participation.

Awareness raising, skill development, commitment to diet and lifestyle changes and friendship building were all important outcomes of the camps.

Empowerment was another important aspect of the camps: they were organised and run by Koories; their primary focus was on Koories with diabetes taking control of their condition; and the de-mystification of professional knowledge.

This case study represents a simple strategy reaping multiple outcomes.

INTRODUCTION

The majority of Koories[1] in Victoria experience the low standards of health associated with other low income groups. Inadequate income results in inferior housing, nutrition and access to health care, amongst other things. Statistics show that among Koories, health is much worse than the average Australian, and diabetes, although rare prior to white settlement, today features high on the list as a cause of early death.

While all the reasons for the high incidence of diabetes are not known and there may be some genetic factors, nevertheless there are contributing factors which can be controlled - like diet, access to information and treatment.

As the Aboriginal Hospital Liaison Officer at St. Vincent's Hospital (Melbourne), I was involved in initiating a program which was designed to tackle some of the problems of educating Koorie diabetics about their disease and its management.

Through my work with Koorie communities throughout Victoria and as a Koorie with diabetes myself, I have gained a good understanding of this wide-spread condition and the special problems associated with it in the Koorie community.

The health system does a lot for diabetics, but medical staff seem to forget just how difficult it is when a diabetic goes home. There is a lack of communication and a lack of knowledge - the family, even my family, do not understand. You're taught, but your family knows nothing, when you go home and need their support and guidance, you don't get it because they don't know what you are on about.

GOVERNMENT RESPONSE

Back in 1980 the Government responded to the health needs of the Koorie community by establishing the Aboriginal Health Resources Consultative Group with a sub-committee focussing on diabetes. This sub-committee confirmed the wide-spread occurrence of diabetes by conducting a sample random survey of a total of fifty Koories in Ballarat and Bairnsdale. Five new diabetics were identified in both groups - that's a total of ten percent increase in two, quite separate communities.

In 1982, I established a diabetic support group at St. Vincent's Hospital, and was approached by a worker from the Lions International Diabetes Institute (Sandy Gifford, a medical anthropologist) who wanted some advice on how to involve Koories in diabetes education programs elsewhere. I explained that with programs run in hospitals along traditional lines, Koories might turn up for one session because their doctors had told them to go to this education program, but many would be unlikely to return. A hospital is like any big institution - Koories feel like strangers in the white person's (gubaa's) bureaucratic system.

"...KOORIES FEEL LIKE STRANGERS IN THE WHITE PERSON'S ..BUREAUCRATIC SYSTEM."

ORIGINS OF THE CAMP

It was from this discussion and others with the medical staff at St. Vincent's Hospital that the idea of holding a Koorie diabetic camp arose. The idea for the camp was not just for diabetics, but for the members of their families as well. We decided to specifically target these camps to people who lived in the country, as these people are often the ones who have

least access to information and services. Therefore, we felt that a bush setting would be the best place to hold such a camp as it is more in line with where people live in the country. These camps are more than education camps - they're real 'get togethers'.

The first camp, held in October 1985 at Camp Jungi, Rubicon Lane, Thornton (Victoria), near the Eildon Weir, was funded by the Lions International Diabetes Institute, but it took twelve months of hard slog beforehand to educate the professionals and the Koorie community. For example, the Dietician needed to know that Victorian Koories are meat eaters. Subsequent camps have been held each year. (In 1988, the State Health Minister, David White, granted ongoing funding for the camps.) The camps are run over five days with participants and organisers 'living-in' at the camp site - sharing accommodation, meals and recreation time. The content of the education program[2] is similar to standard programs, but care is taken to discuss all issues in the appropriate context of Koorie culture.

THE CAMPS

The idea behind the camps was that they'd be run by Koories, this meant involving Koories from all over Victoria right from the beginning, even before we had the funding for the first camp, and maintaining this involvement before each camp. This emphasis on Koorie management has always been essential for the Koorie community to collectively take control of the problem of diabetes on their own terms.

As I'm pretty well known in the Koorie community (I've been involved with my people in a working capacity for nearly twenty-five years and I've travelled and lived all over the State), I used my contacts with local Koorie Hospital Liaison Officers, Koorie co-operatives and the Koorie medical services around Victoria, and asked them to choose Koories with diabetes and their families to attend meetings with me. At these initial sessions, I explained the idea of the camps to the people:

- that it was a chance for Koorie diabetics to learn about their condition and gain the self-care skills involved;
- that their families were encouraged to come and take part too;
- that it wouldn't just be a lot of boring lectures, but include other activities;
- that we'd discuss the social, economic and political problems associated with being a diabetic; and
- that Koories would be organising and running the camp.

Although I have made it my role to conduct these pre-camp meetings each year, the essential point is that it is a Koorie who is running the meetings. As a result of this approach, the 1985 and 1986 camps both had around thirty people and by 1987, the camps gained much greater acceptance among Koories with sixty-four people attending!

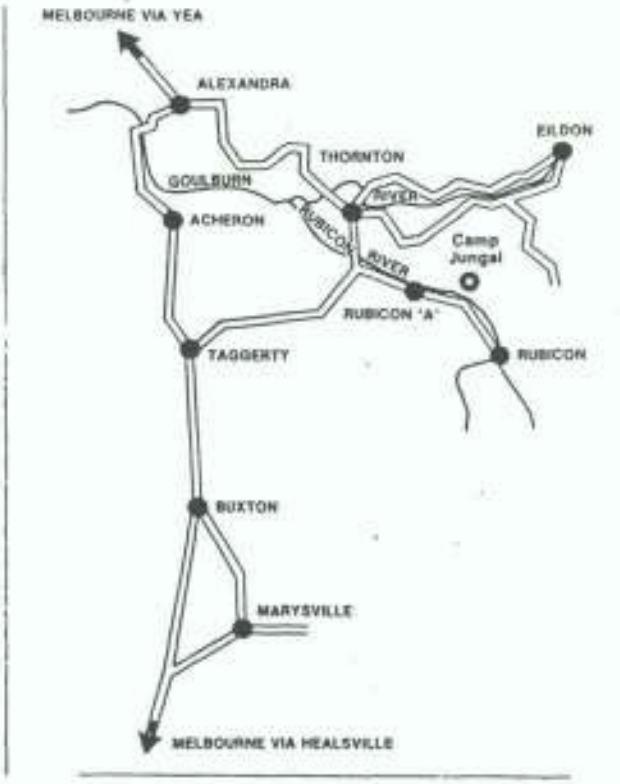
By and large, most people who attend the camps are pensioners or people who are on very low incomes. They come from all over Victoria, including Horsham, Dimboola, Stawell, Portland, Morwell, Bairnsdale, Mildura and so forth. In addition, the 1987 camp had people travelling down from Alice Springs and New South Wales.

I call these camps 'Togetherness Camps' because they bring people together who don't normally get to see each other - which often happens in our community. A brother or sister live in Bairnsdale and the rest of the family live in Mildura. Diabetes is an inherited disease so the camps have this side benefit of bringing relatives together. People come for a variety of reasons, some because they want to be able to help a diabetic father or mother:

"DIABETES IS AN INHERITED DISEASE SO THE CAMPS HAVE THIS SIDE BENEFIT OF BRINGING RELATIVES TOGETHER."

"The reason I came here is, I've been associated for over twenty-five years with a chronic diabetic. I came along because I had a compassion but not the understanding of the need for support."[3]

·CAMP·
·JUNGAI·





Photograph courtesy Joan Vickery, Koorie Health Unit

"I came (to the camp) to learn about diabetes so I could help my father. It's been good. I learnt a lot about diabetes and health in general. The things I've learnt about eating meat and how the diets changed over the years, I never knew that."

Others attend the camp because they've recently acquired the condition and want more information.

"I've had diabetes for three years... I didn't know anything about diabetes. Nobody had ever sat down and explained it to me".

"I came to the camp cause, well I didn't know I had sugar in my blood till I came to the camp. I knew in my water but not in my blood. Every time I tested it would be negative."

"I've only had diabetes fourteen months. No-one talked to me about diabetes, there were no counsellors at the doctor's surgery. I even went to the library and I couldn't find anything."

The longer term sufferers come to get more information and to meet other diabetics and many come as a direct result of the initial meetings, which precede the camps:

"I've had diabetes fifteen years. I went up to Rumbalara and Joan was there and she said I could come here."

"Being a diabetic for eighteen years, I'm glad I came cause I met a lot of other diabetics. When you don't meet people, you don't know there are so many around... Meeting others with diabetes takes the strain off you."

"Sixteen or seventeen years I've had diabetes. Five out of seven of us in our family had diabetes. I had a brother on insulin and the others on tablets. I came to the camp to find as much info. as I could about it, seeing we were all affected by it."

The camps have a 'holiday' atmosphere and this is an important element in encouraging people to come. Many people have attended several camps and use them as a means of reporting and keeping up their commitment to maintaining changes to diet and lifestyle.

PROGRAM DESIGN

The content of the camps involved contributions from Koories and medicos alike. Prior to the first camp in 1985 a workshop was organised involving key people from throughout the State - Koories, diabetics, non-diabetics, doctors and health educators. We 'brainstormed' and discussed all sorts of ideas and eventually came up with a five day program which, although it varies a bit from year to year, has been used ever since (see footnote 2). The program is distributed at each camp and if people want to raise an issue which isn't covered, it immediately gets included in the program. In addition, the participants are involved in an evaluation of each camp. Issues raised in these evaluations are included in subsequent camps.

The emphasis of the program is on participation and practical demonstration. The participation is very important, if the health professionals were doing all

the talking - saying what 'should' or 'should not' be done, people would stop listening, especially Koories. At all times we attempt to link the program to the particular circumstances of people's lives.

SMALL WORKSHOP GROUPS

We spend most of the days in small workshop groups which follow the input from the team of doctors, dieticians and diabetes educators. These workshops, through the use of practical exercises, activities and role-plays, allow for real participation and discussion - they give the participants a chance to apply the material to their own lives and circumstances. They also provide the opportunity to share experiences and learn about how each copes with the difficulties created in the lives of Koorie diabetics.

"AT ALL TIMES WE ATTEMPT TO LINK THE PROGRAM TO THE PARTICULAR CIRCUMSTANCES OF PEOPLE'S LIVES."

A further form of participation and empowerment which has been built into the camps is the production, by the participants, of booklets and posters for Victorian and interstate Koorie communities about diabetes and its effects, and about the camps themselves.

The special problems faced by Koories with diabetes go far beyond their lack of knowledge about the condition - they extend right back to the cultural tradition of our people and arise out of the impact of white settlement. During the camps, discussion about these special problems have raised a number of important points.

"...MOST HEALTHY FOOD ITEMS COST MORE THAN JUNK FOOD."

i) **Traditional diet**. Diabetes was rare among Koories prior to white settlement. Now they can't return to their natural high quality diet - few Koories are experienced in obtaining and preparing traditional foods anyway.

ii) **Regulating diet**. Being on low income makes it difficult to buy the right food: "most healthy food items cost more than junk food". "Living in a large family and coping with one diabetic means preparing two sets of meals with two different budgets".

During the camp, a day is set aside to look at nutrition and food. In the evening, the meal is designed to follow-up some of the issues which were raised. So for instance, the young men build an underground oven (or 'Hungy') in which the entire meal is cooked - chicken, pork, lamb, pumpkin, potato and cabbage. No fat or oil is used and it demonstrates how delicious a balanced, nutritious meal can be. The same practice is used with fish, where people barbeque their fish in foil, instead of using oil.

"THESE ROLE-PLAYS ALSO EDUCATE THE MEDICAL TEAM AS THEY SEE HOW KOORIES SEE THEM."

iii) **Side-effects**. For diabetics: "Other illnesses are more likely - so it's hard to adjust". These side-effects include weakness in legs; sores on legs and feet; poor eyesight; sleepiness; absent-mindedness; unbalanced

Photograph courtesy Joan Vickery, Koorie Health Unit



gait (which can be mistaken for drunkenness and sometimes results in arrests).

iv) **Understanding**. "I don't understand why my diet has to change"; "there's not enough education and information provided".

In addressing these issues, we use practical exercises, such as, blood sugar level tests and role-plays, where we set up a situation representing the roles of doctor and patient. In this way participants learn about their right to ask questions of doctors and to demand a doctor's full attention. These role-plays also educate the medical team as they see how Koories see them. On the day we're discussing hypoglycaemia we take the participants on a walk for exercise.

"...WE USE THE EVENINGS AS RECREATION TIME SO THAT PEOPLE CAN SOCIALISE AND GET TO KNOW OTHER PEOPLE..."

Other issues are harder to address, such as:

v) **Medication**. "Most Koorie diabetics live in town camps and have no fridge, that means they have trouble stocking foods and diabetic medicines".

vi) **Isolation**. Their lack of access to medical services creates further problems: "Living in remote areas with no transport means having to rely on health workers".

(These comments were about Aboriginals who live in the centre of Australia.)

Of course the camps are not all work, we use the evenings as recreation time so that people can socialise and get to know other people, including the medical team and organisers. We have darts, hockey competitions, lawn bowls and bingo.

DE-MYSTIFYING PROFESSIONALS

Whilst the camps, themselves, are run by Koories, the education team - which includes doctors, dieticians and diabetic educators - is made up of white professionals, for example, one doctor from St. Vincent's Hospital, one doctor from the Aboriginal Medical Service (Melbourne) and a nurse educator from the Lions International Diabetes Institute. We've been lucky to have had very sensitive professionals who are prepared to listen, rather than taking the standard approach of professionals of just going off and doing what they usually do in a hospital or medical centre situation. Our team members have always been prepared to adjust their approach and follow my advice: before talking to a group, we'd sit down and go through it together - in this way we could fine-tune the content for example, type of terminology used, so as to make it relevant to Koories and acceptable to communities from different parts of the State.

"DEVELOPMENTAL PROGRAMS LIKE THE CAMPS ARE ALWAYS HARD TO EVALUATE IN TERMS OF CONCRETE OUTCOMES."

This sensitivity of the professional is all important, as one participant put it:

"The dietician, the doctors and the nurse, who ever picked them out, well, they were spot on! Especially how they communicated to the Koories. They were easily understood. It took a couple of days to work out who the doctor was! He blended in so well!"

A big function of the camps is breaking down the suspicion which surrounds medical professionals. Role-plays, involvement by the professional team in all the social and practical activities and the live-in nature of the camps, all help in making the professionals more 'human' in the participants' eyes. At the start of each camp every member of the team introduce themselves - who they are, where they work, whether they are married, how many kids they have and so forth. The general Koorie attitude is: "if you're going to be working with me, I want to know a little bit about you".

OUTCOMES

Developmental programs like the camps are always hard to evaluate in terms of concrete outcomes. The fact that we have had such a huge attendance and interest shown at the camps signifies that the camps are important to the people. It's clear that participants gain a great deal of information and leave with a much clearer understanding of their condition. The following comments were recorded at the evaluation of the 1985 camp:

"I found out a lot I didn't know. I found out about not eating too much meat and eating bread and potatoes and plenty of vegetables and fruit. I met people and got to talking."

"...THE CAMPS HELP TO STRENGTHEN THE PARTICIPANTS' WILL TO CHANGE..."

"It was very interesting. Communicating with other diabetics was good and I learned a lot more from them. I learned a lot about smoking and what it does to your feet and legs. I knew what it did to the lungs but not the feet and legs. I liked the discussions. That was good the discussions different people had."

"I've accompanied Ruth over the years to doctors that were dictatorial. I wasn't interested. But here, the collective interest is good. You become involved yourself. Otherwise you're just sitting on the outside. Here this can't happen. It's the result of the discussion groups. The relaxing atmosphere was beneficial to everyone and I'm looking forward to any further involvement in discussion groups for diabetics."

Whilst responses like these are rewarding for the organisers and show that we have achieved what we

set out to do, they are not the hard, concrete outcomes which the Health Department requires.

"MORE MEASURABLE OUTCOMES HAVE EMERGED IN THE FORM OF INDIVIDUALS SEEKING MORE APPROPRIATE MEDICAL SERVICES."

We certainly can't claim that the camps have permanently changed the participants' lifestyles. It's clear that education alone is not enough - the camps help to strengthen the participants' will to change but circumstances remain the same. Low income make it extremely difficult to stick to the right diet; Victorian Koories are meat eaters so the transition to more vegetables in the diet is hard; and fast food is such a temptation. Nonetheless, small, long lasting diet and lifestyle changes are achieved by some participants, as shown by the following comments:

"The special thing learned was about my diet. I didn't know I could eat bread and potatoes."

"I learned a lot... about this here new diet. If I hadn't a come, I'd still be on that old diet I reckon. And the bread and the spuds are more filling than the meat."

"I learned about the new diet. I was educated in the old way. The new diet isn't so hard!"

More measurable outcomes have emerged in the form of individuals seeking more appropriate medical services. This comes about because the camps help them break through some of the fear and suspicion with which they view white professionals and institutions. For example, one participant who was on medication, but who obviously needed stabilisation, took action following the camp. She came to Melbourne and chose to go to hospital where she received the treatment that she needed. She realised during the camp that her eyesight was being affected by her condition and proceeded to undergo laser treatment and to wear glasses. Her own self-care has also improved. This example is typical and many participants who attend the camps seek out and become more receptive to medical assistance.

"KOORIES ARE ABLE TO RELATE TO THEIR PROBLEM IN THEIR OWN TERMS."

CONCLUSION

It has now been three years since our first camp and each year since we have been attracting greater numbers. People are interested in the camps because of the way they are structured. The emphasis on participation provides the opportunity for Koories to take control of the problem of diabetes, both individually and collectively. The fact that the program looks at diabetes in the context of the particular circumstances and culture of Koories means that Koories are able to relate to their problem in their own terms. The camps have provided people with many benefits: the opportunity to gain greater information on diabetes; to share experiences and other issues of common inter-

Photograph courtesy Joan Vickery, Koorie Health Unit



ests; to strengthen links and for many, to reinforce the commitment they made to life-style and diet changes. We also hope that Koories leave the camps with less suspicion and fear of the medical profession and that the health professionals realise the need for change to the traditional manner in which Koorie diabetics are treated.

FOOTNOTES

(1) Koorie is the term that Victorian Aboriginals prefer to be known by. It is a traditional language term which means: "One of Us".

(2) THE PROGRAM:

Monday

What do you think causes diabetes?

How did you feel when the doctor told you that you had diabetes?

How does it feel being a Koorie and having diabetes?

Is it harder for Koories to follow diabetes treatment? and why?

How does having diabetes affect your life?

Tuesday

Developing lists of food groups:
- Starch (low and high fibre)
- Sugars
- Fat foods (pure and high).

Listing good diet.

How can you reduce your fat intake and still enjoy eating meat?

How can you eat and drink when out, without upsetting your diabetes?

Food for diabetics - our thoughts.

Quick alternative meals at home.
Alternative meals to suit the whole family.
Recipes and Menus.
What are the best kinds of take-away foods?
Group ideas for a leaflet about food for diabetics.

Wednesday

Role-plays by doctors, nurse and diabetic educator.
How do you choose your doctor?
Your rights as a person and so forth.

Thursday

Blood sugar - causes
- how do you feel when you have it?
- what can you do about it?

Friday

Changes needed in this program.
What would you like to learn about?
What was good about this camp?

'Fun' Activities During The Camp:

Boat cruise, Bingo, Bike riding, Dart competition, Hockey

(3) This quote and all others that appear are taken from: Victorian Aboriginal Sugar Diabetes Camp, October 1985. This booklet was produced from comments by the participants of the 1985 camp.

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RESOURCE 9

CASE-STUDY 3: THE VILLAGE DEVELOPMENT COMMITTEE: COMMUNITY PARTICIPATION IN DEVELOPMENT IN PAPUA NEW GUINEA

Authors: David Patterson and Kaoga Galowa

Source: Case example 20(a) in C. Chu, and R. Simpson, (eds.) (1994) *Ecological Public Health: From Vision to Practice*, Institute of Applied Environmental Research, Griffith University and Centre for Health Promotion, Toronto, pp. 239-241.

INTRODUCTION

The national Department of Health in Papua New Guinea is strongly committed to the concept of community participation in development. The health and well-being of local communities rest in large part on their ability to take control of the development process and direct it to meet their own needs. The sustainability of any intervention including those in health is contingent on the commitment to and ownership of the project by the community.

Consistent with the insights provided by health promotion, the Department also understands that improving the health of a community is not purely a medical problem. It also requires the consideration of broader social and economic factors that provide a supportive environment for health. These may include such diverse factors as improving infrastructure, education or employment. Recognition of the critical role of these factors has prompted the Department of Health to identify the Village Development Committee (VDC) as an appropriate vehicle for involving community members in broadbased development activities which will improve the overall health and well-being of the community.

PURPOSE OF THE VDC

The Village Development Committee is a community based organizational mechanism through which people at the local level in Papua New Guinea are empowered to participate in the process of developing their communities. The VDC is intended to be a permanent element of community organization through which community members can take a sustained part in guiding, making decisions and contributing time and resources to building their communities.

These committees, made up of community members, meet regularly to guide the process of development based upon their own understanding of their community's needs and upon the *Integrated Human Development Model* (IHD). The Integrated Human Development approach emphasizes meeting *Basic Human Needs* (BHN). The IHD/BHN is a balanced and synergistic approach to development that focuses not merely on economic development, or improving health, but upon obtaining the fundamental human requirements for a fulfilling life for all members of the community. Thus, under this approach, development must embrace the following areas:

- nutritional needs - food and water
- physical safety needs - family security
- educational needs
- social and spiritual needs
- health needs

It is not necessary that a community work upon all these areas simultaneously. Rather, the community selects projects that focus on the most pressing of these needs as perceived by the community itself.

HISTORY OF THE VILLAGE DEVELOPMENT COMMITTEE

The VDC concept is not new in Papua New Guinea. VDCs were first introduced as part of an experimental primary health care project in New Ireland Province in 1979. In 1984 the Province accepted PHC and the Village Development Committee as the vehicle for delivery of health care services to the community throughout the Province. Subsequently all provinces in PNG developed programs and plans to promote PHC/VDC.

Despite these plans to promote the VDC concept not all provinces introduced the program at the local level. Lack of commitment by provincial officials and lack of organizational capacity prevented many provinces from instituting the program. As a result, in 1988, the Department began the implementation of a national program to help the provinces promote the formation of Village Development Committees.

THE VILLAGE LEADERSHIP TRAINING PROGRAM

The Health Department decided to support the organization of Village Development Committees by conducting village leadership workshops. These workshops are conducted by national health staff with assistance from provincial health officials. The purpose of the workshops is to provide village leaders with the necessary knowledge and organizational skills to establish VDCs.

The content of the workshops include:

- purpose and nature of the *Integral Human Development* approach,
- assessment of community needs and priorities,
- participatory leadership skills,
- group process and facilitation,
- dispute mediation,
- interpersonal communication.

Follow-up review workshops for participants are also held to discuss problems and successes.

After village leaders have received this training, they return to their villages where they hold a general meeting to discuss the VDC concept with the other members of the community. Following this, representatives are selected and the VDC begins the process of organizing development activities in the community.

The following provinces have already participated in the Village Leadership Training Programs and have VDC programs in full swing:

East Sepik with 90% of all communities covered;
West Sepik with 75% of all communities covered;
Southern Highlands with 60% of all communities covered.

These three provinces have each held four training workshops for village leaders. Leadership training workshops have also been recently held in Milne Bay and New Ireland. In total, about 200 village leaders have been trained and 180 VDCs have been formed in the five provinces.

STRUCTURE AND PROCESS OF THE VDC

Although VDCs may be organized for a single village or embrace several villages, contingent on local requirements, all VDCs are organized on common principles:

1. VDCs must be representative. VDCs must be organized so as to represent all major social groups in the community. A typical VDC will have representatives from church groups and from women's, men's and youth organizations.
2. The VDC group representatives must be selected by members of that community group. Thus, for instance, the women's group will identify and send a member of their own choosing. This is done by all community groups.

When the VDC has been constituted, its first task is to establish a set of development priorities for the community. This is done through discussion within the VDC, and in consultation with the community. When development priorities are agreed upon, projects to achieve them are designed and an action plan for carrying out the projects is the developed. This plan specifies what resources are required, what segments of the community will contribute these resources, and the timetable to be followed in implementing the project. After the initial development plan has been finalized, the VDC works with the community to carry out the plan and monitors the progress of the projects.

Most projects are carried out using volunteer labor and local resources and materials. Typical projects undertaken might include building a meeting hall for a woman's group, levelling a playing field for sports events, or putting in fencing to keep pigs out of gardens. If additional resources are needed, representatives of the VDC meet with appropriate government officials, local, provincial or national, to obtain technical assistance or funding. In the past, government has provided the following types of assistance:

1. Technical feasibility studies including water system selection, site selection for water systems, rubbish and excreta disposal systems.
2. Transportation of material through the regular government transportation network or by boat or plane charters.
3. Technical training Workshops, e.g. training in water system maintenance.
4. Costing for projects.
5. Matching funds for water systems.

If a VDC, for example, choses to implement clean water projects for the community, VDC members may meet with representatives of the environmental health unit of the provincial health department to obtain technical advice on well placement, water storage and distribution, and other questions. Officials will help the community organize itself to provide the contributions of matching funds, materials and labor required by the government for such activities.

The VDC continues to meet after the completion of the first project. It conducts ongoing discussions of community needs and sets priorities and plans for future projects.

LESSONS LEARNED

Although the VDC program has not yet been systematically evaluated, plans have been made to conduct a formal evaluation. Nevertheless, much anecdotal information is already available about the progress of the VDC program.

1. VDCs, once initiated, have successfully planned and implemented community-based projects.
2. In areas where VDCs exist, there are often drastic decreases in the number of cases appearing at health posts with common preventable illnesses.
3. VDCs will often compete with the VDCs of other communities in starting and completing projects thereby galvanizing the development efforts of both communities.
4. Community leadership is strengthened through participation in VDC activities. VDC members attending review workshops report that they have gained confidence in their leadership abilities. A few have gone on to become provincial or national politicians.
5. People have developed greater self reliance and have realized that there is much they can do on their own without having to wait for the government to direct them.
6. VDC support the existence of indigenous culture and institutions.
7. The VDC provide an increased flow of external assistance in development activities in two ways:
   - by institutionalizing a mechanism through which the government can communicate directly with the community on its development priorities; and
   - by introducing a means, at the community level, for utilizing aid the government supplies.

The following areas of the VDC program need further support and development:

1. Follow-up support by appropriate government agencies is necessary to the success of new VDCs. It has been found that if the government does not support new VDCs either by failing to respond to requests for assistance, or by not holding review workshops, communities often lose interest in the program.
2. Rapid turnover of provincial personnel with responsibility for the VDC program at their level results in poor performance and stagnation of the program.
3. Commitment of provincial level officials must be secured. If provincial level officials lack commitment to the program, it is difficult to make progress in introducing the VDC program. Obtaining the support of provincial officials is therefore critical.
4. At both the national and provincial levels, the cooperation of all branches of the government is important for the success of the program. The Health Department should not be solely responsible for the implementation of the VDC program. Success in the long run will depend on the support of all relevant units of the government.

RESOURCE 10

CASE-STUDY 4: PARTICIPATORY DESIGN PROJECT IN SAN-CHUNG, TAIWAN'S HOU-CHU-WEI PARK

Authors: Pei-ju Yang and Marshall Johnson

Source: Case example 20(b) in C. Chu, and R. Simpson, (eds.) (1994) *Ecological Public Health: From Vision to Practice*, Institute of Applied Environmental Research, Griffith University and Centre for Health Promotion, Toronto, pp. 242-243.

INTRODUCTION

The social significance of our project, the Hou-chu-wei community park, might be seen in the transformations of its name. Hou-chu-wei (which originally was translated as "The Bamboo Garden out back") was a small peasant community near what is now Taipei, Taiwan. Through the fifty year Japanese occupation of Taiwan, the community was distinguished locally by its temple and patrilinease social life and the stand of bamboo on the margin. A new state, the Chinese Nationalists, arrived in 1945 and ruled under martial law for forty years, continuing the Japanese and Ch'ing policy of excluding ordinary people from decision-making.

The new government changed the name to sound similar to the traditional name, but the characters are different. The homonym is actually a political name chosen by the regime as an aid in changing the identity of the community. During the following forty years the new Hou-chu-wei was engulfed by the unplanned growth of Taipei and its attendant nightmarish disorder of space, pollution, and alienation. The bamboo patch became a dividing between the longstanding residents and recent migrants. Gradually in the 1990's the bamboo grove was turned into a garbage dump.

With the end of martial law, new opportunities for local planning and design were created. The people of the Hou-chu-wei neighbourhood petitioned the new reform government of their city to clean up the eyesore that had displaced the original "bamboo garden out back". At that point, people who had taken the initiative in the community contacted activist professionals from the National Taiwan University's Building and Urban Planning Graduate Institute beginning a process of collaboration, conflict, negotiation and redefinition of health, space, society, citizen and professional.

THE PARK DESIGN

The space is approximately one city block situated between a community in place since the Ch'ing Dynasty and one only thirty years old. The concrete box flavour of the surrounding apartment complexes is muted by a green L shaped corridor leading into the park. A derelict Ch'ing Dynast farmhouse, the only building on the site is being restored as a connection to the area's past and as a multi-use public place.

The majority of the remaining space is organized to provide for four different activities associated with four different groups: a basketball court and softball field for older children and young adults; a playground for younger children; a shaded area for chatting, drinking tea and quiet rest for the elderly; and a moderately secluded space for traditional Chinese exercises for the women of Hou-chu-wei.

The remaining spaces are given over to activities that tend to bring all groups together, i.e. a communal musical entertainment area; a family barbecue area, and a public garden in the corner of the park which buffers a particularly noisy street.

PRODUCING THE SPACE, PRODUCING COMMUNITY

The initiative for the park came not from those who are the recognized local leaders, but rather from the more marginal young people and women. Contact was made with the professionals and the question became how to build broad support for a new use of the de facto dump. The central problem was one of social responsibility, i.e. who/what is society and what is the responsibility to it? The answer developed in the participatory design process.

Young people took the lead in spreading the word that the community could design the park. They held a parade to urge people to join in the planning process. Action was then required to show the potential of the site. A clean up was carried out by students/professionals and women from the local area. The public transformation from dump to open space was favourably observed by many and the project became the main topic of conversation in both the older centre and bordering new community.

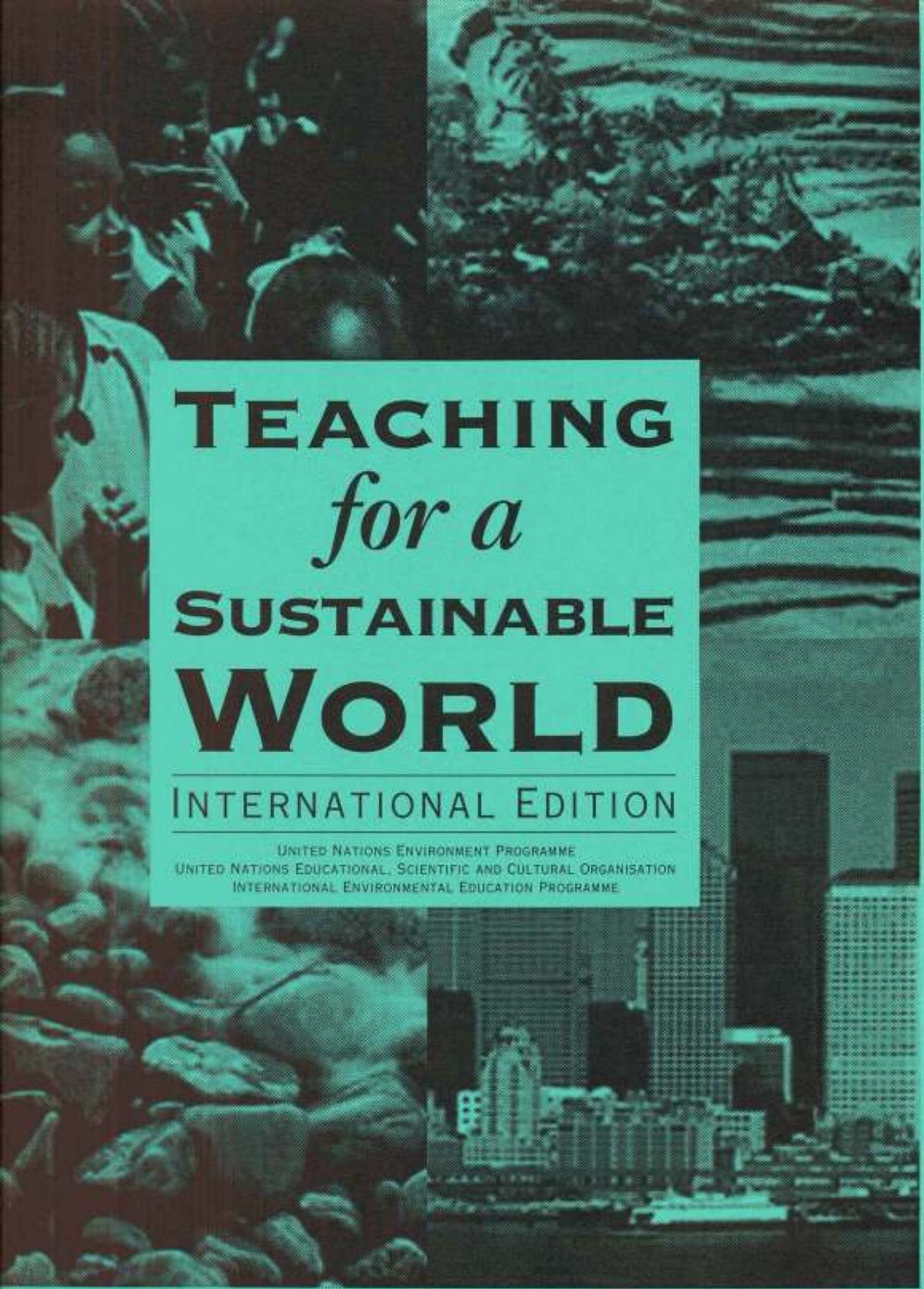
Activities appreciated by the residents (e.g. a karioke singing program), were organized to realize the possible uses of the space. Whilst the activities were organized collectively by the local core and the people from the Graduate Institute, success came through contact with the existing local organizations that defined "social"- the area council and the temple association. Once these men, the "insiders" from the old Ch'ing Dynasty community, put out the word, the residents joined in.

The planning then began in earnest. The core group and the professionals faced two sorts of contradictions. As the karioke event had shown, networks organized around long term male residents could bring people into the present but tended to reproduce the inequalities that constituted their authority. The definition of community and society, however, included young people, newer residents, and women. The other contradiction centred on the transformation of professional knowledge into social power. Residents felt that their lack of technical knowledge made nonparticipation in planning a natural outcome. These were local manifestations of problems in the society at large and the solution was to mobilise all residents, both informally and through existing networks, into a situation in which each person had an equal voice and professionals served to translate their felt needs into technical plans which everyone could understand.

Two activities were organized to prepare for the actual planning by tapping residents' senses of time, both as social memory and daily routine. In one action, the elders of the community gathered in the future park space to tell stories of Hou-chu-wei's past, not to a planning group but to everyone who cared to listen. The core group members encouraged everyone to think of what that might mean for the space of the park itself. In the other action a long sheet of paper was divided into times of days and then the residents drew scenes keyed to a daily routine.

During the final stages of planning the professionals/students and resident activists agreed that community participation and social empowerment meant recognizing social power within the community was an obstacle as well as a resource. Final planning was therefore conducted in four separate groups: women, older men, middle aged and young men, and children. Each group produced a plan; the role of the professional was to help materialize their wishes on the paper provided. All the groups were brought together and their final discussion was mediated by the core group. Eventually, all parties gave a little and took a little. Women relinquished the demolition of a dilapidated house which was viewed by the older men as historical. The professionals and students pushed for a vegetable garden, a site for collective responsibility, but none of the residents could cope with this as it was seen to be connected with peasant labour, individualized and hardly appropriate for a leisure space. The suggested tool shed was rejected as looking too much like the ubiquitous little shrines to the earth god. The consensus design was then transformed into a more formal model and presented to another open meeting for ratification. Negotiations then commenced with local administration for permits and funding.

In this first community based planning project in Taiwan, there was a redefinition of the meaning of society and responsibility to that society. To empower people requires recognition of divisions within a social formation between the local area and the centre and within the local area. Participation in the actual planning was surprisingly widespread. By the end of this process, the government's political name for Hou-chu-wei had been replaced back to the original *"THE BAMBOO GROVE OUT BACK"*. On the basis of that success however, we all had to find forms - dividing the final planning groups into four; spreading the word through women's networks; relying on the enthusiasm of children; and linking the male dominated temple association to the larger question of what kind of society Taiwan was and ought to be - that were variably effective in creating a more equitable distribution of power. Equally clear, however, were the hierarchical limits of gender, age and class which the residents cannot help but come up against.



MODULE 12

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID
AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT
GRIFFITH UNIVERSITY

Environmental *and* Health Education in Rural Communities

ROB O'DONOGHUE
NATAL PARKS BOARD/SHARE-NET
SOUTH AFRICA

INTRODUCTION

This workshop invites participants to explore different ways of using an Enviro-Picture-Building resource. The key concern of the workshop is to examine 'outside expert' and 'participatory' models of environmental and health education in rural community contexts. To explore these issues participants compare contrasting ways of using the 'picture-building' resource materials. The different approaches examined are:

- a story and a problem-solving presentation which inform people about their health problems and suggest what should be done to solve them; and
- a question and answer picture-building process and a sketching activity which enable people to grapple with local health and environmental issues.

OUTCOMES

The workshop seeks to enable participants:

- to illustrate some of the complexities of contrasting 'styles of delivery' of community based environmental and health education; and
- to reflect on the experiences in terms of approaches to environmental education that aim to facilitate community empowerment and sustainable development.

WORKSHOP OUTLINE

1. Introduction

This activity provides a brief introduction and a rationale for the workshop and concludes with a mini-lecture and group discussion on contrasting approaches to environmental and health education for rural communities. The history of the picture-building technique is also explained. The focus is on how contrasting approaches to environmental and health education appeared in the early design and

use of picture-building exercises. The activities which follow illustrate these contrasts.

2. Picture-building 1

Participants build a picture of rural life and its problems followed by the examination of problem-solving replacement cards in order to make decisions on solutions to local problems.

3. Picture-building 2

Participants use a question and answer picture-building activity, discussion of local experiences and the use of a sketching scope to draw pictures of local environmental and health issues of concern to them.

4. Conclusion

This activity challenges participants to draw on both approaches to picture-building to develop a proposal for local environmental and health education. Participants develop a proposal for the adaptation and use of picture-building in a school or community education situation.

MATERIALS REQUIRED

A) PROVIDED RESOURCES

Resource 1: Madlusuthe's Farm: Environmental and Health Issues

Resource 2: The Changing Orientation of the Expert

Resource 3: The Enviro-Picture-Building Resource

Resource 4: Madlusuthe's Farm: Problems Solved

Resource 5A: Sketching Scope

Resource 5B: Sketching Sheet

B) TO OBTAIN

Activity 1: Photocopy and enlarge Resource 1 to A3 size on light card for best results

Activity 2: Photocopy and enlarge Resources 1 and 4 to A3 size.

Activity 3A: Photocopy and enlarge Resources 1 and 4. Cut up an A3 size version of Resource 4 into 20 individual pictures. Use Resource 1 as the picture-building board.

Activity 3B: The materials needed are listed on Resource 5A. Clipboards or some sort of firm support would be helpful when using Resource 5B for fold sketching.

ADDITIONAL READING

Bauman, A. (1989) The Epidemiology of Inequality, in *2020 A Sustainable Healthy Future: Towards an Ecology of Health*, Melbourne, La Trobe University, pp. 43-67.

Brown, V.A. (1994) Health and Environment: A Common Framework and a Common Practice, in C. Chu and R. Simpson (eds.) *Ecological Public Health: From Vision to Practice*, The Institute of Applied Environmental Research, Griffith University and Centre for Health Promotion, Toronto, pp. 52-61.

Colquhoun, D. and Robottom, I. (1990) Health Education and Environmental Education: Toward a Shared Agenda and a Shared Discourse, *Unicorn*, 16(2), 109-118.

Kickbusch, I. (1989) Good Planets are Hard to Find: Approaches to an Ecological Base for Public Health, *Future*, 13, 29-32.

Labonte, R. (1990) Econology: Health and Sustainable Development, in C. Chu and R. Simpson (eds.) *Ecological Public Health: From Vision to Practice*, The Institute of Applied Environmental Research, Griffith University and Centre for Health Promotion, Toronto, pp. 19-35.

Rootman, I. (1988) Inequities in Health: Sources and Solutions, *Health Promotion*, Winter, 2-8.

World Health Organisation, Health and Welfare Canada and Canadian Public Health Association (1986) *Ottawa Charter for Health Promotion*, WHO, Copenhagen.

— (1987) Then and Now: Reflections on a Quarter-Century of Change, *Health Promotion*, 15, 2-7.

1. INTRODUCTION

Outline the focus of the workshop on the processes of health and environmental education, especially in rural communities.

The 'Tea Party' introductory activity in the preceding module by Helen Spork on 'Health, Environment and Community Development' could be used as an 'ice-breaker' if that workshop has not been completed by participants and if facilitators believe participants would benefit from an introductory exploration of the links between health and the environment. Various OHTs on personal, community and environmental health from the Spork workshop might also be issued to consolidate this idea.

- Then organise participants into groups of 4-5 members and ask them to identify some environmental and health issues in their communities.
- Ask for group responses and make a list for all to see.
- Give each group an A3 size enlarged copy of Madlusuthe's Farm (Resource 1). This may also be displayed as an OHT or poster.
- Ensure that participants can use the grid system for locating particular parts of the picture.
- Ask the groups to see if any of the environmental and health issues in their community also occur on Madlusuthe's Farm.
- Call for discussion on group answers, probing for the reasons behind the group answers.
- Explain that there is a second focus of the workshop - an exploration of two contrasting ways of addressing environmental and health issues.
- Present a mini-lecture on these contrasting approaches using the information on Resource 2 as a guide.
- Alternatively, present Resource 2 to groups as a handout and ask groups to identify the nature, the advantages, and the likely problems of the different approaches.
- Conclude the introduction by explaining that the workshop is going to explore these approaches by the use of particular learning experiences based upon 'Picture-building'. Use Resource 3 to describe the history and use of this technique and the way in which the activities to come in the workshop show different ways not only of using the technique but different approaches to environmental and health education.

2. PICTURE-BUILDING 1

A. The Story

Place an enlarged copy of Madlusuthe's Farm (Resource 1) at the front of the workshop room - either as a poster or an OHT. Ask groups to refer also to their group copy.

- Read the following story of Madlusuthe's Farm, pointing to the pictures where appropriate. (The grid squares are provided in the text of the story.)

Everyday Life on Madlusuthe's Farm

Joe, Mba and their two children Sipho and Sammy live on a small farm (B3). Their home is called Madlusuthe's Farm. This is a Nguni (Zulu) name that means 'the place

where people live and are happy together' (A3). Life is hard but they have all that they need. They keep chickens (C3) and there is a garden (C2) where Mba grows fruit and vegetables. The surplus is sold at their road-side stall (A2). Joe is the proud owner of cattle and goats (C4) which Sipho takes out to the pasture each day. When there is heavy work to be done they use a donkey cart (C5). They grow maize (C5) on their lands down by the river. The river is very important as it is their only source of drinking water and it is also where Mba washes the clothes (D2). There are now few trees around their home as, over the last few years, they have cut wood every day (B2) to cook their food. When food is short there are fish in the river (D1) and guinea fowl in the woods (B1) as well as bees that collect and store honey (C1). Life was better a few years ago when Joe had returned from his first job in the city. He then had the money to build a shed (A4) and a pit latrine (B4). The toilet is now full and it smells so the family just use the bush as their parents used to in the old days. Birds of prey (B5) are a problem because they attack the chickens. It has been a drought year with the sun (A5) drying out the crops. Isolated thunder storms (A1) bring much needed water but this erodes the footpaths, lands and river banks (D4). Unlike other areas there is not too much rubbish around. It has been dumped on the banks of the stream (D3). If the drought continues Joe may need to go to the city to find work. This community has many environmental problems for which they need to find solutions.

- Ask groups to discuss two things:
  - A list of environmental and health problems on the farm. Name the problems and grid location.
  - Any additional ways in which they see similarities and/or differences between environmental and health issues between their community and Madlusuthe's Farm (compared with the introductory activity).
- Hear group responses.

B. Community Problem-solving

- Explain that for many of the problems there are replacement cards which show what can be done to solve environmental and health problems. Not all of these will be appropriate for each community but all are actual cases of community problem-solving that have worked.
- Read the following story of how the Madlusuthe's Farm community solved their environmental and health problems. Give groups a copy of Resource 4 which is a picture of how the problems on Madlusuthe's Farm were solved. Ask groups to identify the grid square where they see the solution.

Improving Everyday Life on Madlusuthe's Farm

Joe and Mba worked with their neighbours to solve many of the environmental problems. They formed an action group and started a lot of local environment and health projects.

Community Action Groups

They first started adult literacy classes to learn to read and write. They also started an early learning centre for pre-school children. This released the women to run community improvement projects including a family planning programme (B3).

Water and Sanitation

This was their first priority to improve community health. They learned to make bricks, build better toilets and the government helped them to put in a borehole for water (B4).

ACTIVITIES

Cooking Fuel

Tree planting enabled them to restore trees and a solar cooker helped them to use less firewood (B2).

Rubbish and Pollution

The rubbish was cleared up and buried in a pit. Some of the waste metal was used to make containers. In no time at all the fishing in the river had improved (D3).

Erosion

Eroded paths were repaired and old tyres were used to revegetate river banks (D4).

Monoculture

Indigenous knowledge was used to restore traditional forms of inter-cropping (D5).

Water Pollution

Pollution was decreased by washing clothes near a sump away from the river. Men were encouraged to share the task of water collection (D2).

Over-grazing

The hardest thing to do was to reduce stocking rates. Joe wisely did this and now he has fewer cattle but they are healthier. The grass has recovered and next year he may be able to increase his stock (C4).

- Explain that a community may only have to undertake one or two projects but by being exposed to all of the possibilities in the workshop, they may be able to evaluate alternatives to agree on local priorities and possible future projects. If the community is undecided or overwhelmed, they could start with something practical. Small successes will enable them to consider bigger projects.
- Ask the small groups to discuss:
  - what they learnt from this activity; and
  - the different roles played by them, as participants, and you, as the facilitator.

3. PICTURE-BUILDING 2

A. Community Problem-solving

This approach of picture-building represents a different model of health and environmental education from the previous one. In the previous activity, an outside expert (you, the facilitator) knew the 'answers' to the problems on Madlusuthe's Farm and you used the process of picture-building to teach them (the participants) your knowledge.

Explain that this activity provides a more participatory approach.

Preparation

- Prepare a set of 'solution cards' made from an A3 enlarged version of Resource 4 and cutting it up into picture squares.
- You will need one set of solution cards per group.

Running the Activity

- Ask each group to have before it the following:
  - an enlarged A3 size copy of Resource 1; and
  - a set of solution cards made from Resource 4.
- Ask groups to mix up their 'solution cards' and to place an appropriate card over particular 'problem pictures' on Madlusuthe's Farm (Resource 1) in response to the following questions:

Facilitators Note: The grid square answer is marked in brackets. Facilitators may decide to tell this to participants or allow them to work this out for themselves as part of the activity.

Find a card which represents:

- Something plants need to grow and dams need to stay full (A1).
- Where the family grows fruit and vegetables (C2).
- What provides meat, eggs and fertiliser? (C3)
- A bicycle, a shed and a small pest that eats maize (A4).
- An animal that controls the pests that eat maize (A5).
- A source of animal energy for transport (C5).
- A wetland where fish breed (D1).
- Where the family lives (A3).
- Animals that provide national insect control (B1).
- How the family makes money with the resources from the farm (A2).
- The source of energy that supports all life (A5).
- An insect that produces honey and pollinates plants (C1).

- Explain that there are now eight cards left and eight pictures on Madlusuthe's Farm uncovered. Ask what these eight pictures have in common (all are problems).
- Ask small groups or the whole group how to discuss the remaining cards. Take each picture, one at a time, and discuss:
  - The sort of problems it might solve.
  - Who would be most in favour of it.
  - How easy/difficult it would be to implement.
  - How it might be implemented.

  After discussing each card, ask the group where it might best be placed on the large picture of Madlusuthe's Farm.
- Discuss the cards in the following order:
  - Brick making and toilet and water supply improvements (B4).
  - Stock reduction and manure collection (C4).
  - Tree planting and solar oven (B2).
  - Community action groups for adult literacy and child care (B3).
  - Rubbish clean-ups and the local recycling of waste (D3).
  - Tub washing with a wastewater sump at the end of a stream. Note the man sharing water collection (D2). (This has been a contentious picture often prompting lengthy discussion.)
  - Intercropping, an indigenous practice lost with the popularisation of high yielding hybrid varieties of maize (D5).
  - Erosion works on path, donga (gully) and stream bank erosion (D4).

Debriefing

- Ask for comments on how this second picture-building activity contrasts with the first one, particularly focussing upon who is seen as having the answers to the problems.
- Relate this discussion to the overview of the 'expert information' versus 'community problem-solving' approaches in Resource 2.

B. Studying the Local Community

In this activity, participants have an opportunity to draw a picture (or set of pictures) that depict(s) environmental and health issues in their community. Conduct a group discussion on the sort of problems and conditions to be drawn.

- Drawing Pictures
  - Teach participants how to make a 'sketching scope' (Resource 5).
  - Stress that one is not looking for works of art but for a sketch that 'captures the key features' of the problem.
  - Sight through the sketching scope so that the problem fills the window. Use the division of the sketching area into four quadrants as an aid to sketching the problem.
  - Lightly drawn pencil lines that split the drawing area into four quadrants can be rubbed out after the picture has been drawn.

    (An alternative: Photography can be used instead of picture drawing if cameras are available. Polaroid-style instant cameras have proven very successful in exercises such as this one.)
- 'Teach Back' Picture-building

  Show and share pictures, using them to build up a collage of local environmental problems.
- Discussion

  Invite participants to discuss what they have found and to suggest solutions to problems.

Debriefing

- Once again, compare the 'expert information' approach and the community problem-solving approaches to health and environmental issues. However, remind participants that competing features of current environmental and health education strategies are not as clear cut as is often implied in the rejection of top-down in favour of participatory approaches. Potentially useful ideas are apparent in both.

4. Conclusion

Introduction

The diverse ways in which the picture building materials have been developed and used suggest that approaches may differ in the diverse social situations of environmental and health education. As educators we need to go beyond this simplistic truism and be prepared to examine social processes and power relationships in more detail.

Task

Ask participants to describe how they would plan to use picture-building in a school curriculum or community education context. Give particular attention to how the activity might contribute to developing the capacity for action competence to address local environmental and health issues.

Some Experiences and Responses to Enviro-Picture-building

Community health: Before we used the pictures with people we had no easy way of talking about the problem with the people. The pictures were talked about as if they were the problems of other people in neighbouring communities. The people were able to compare their problems with the pictures. The pictures were a talking board

for the people and a means for us to get into the local problems with the community (Community health worker).

School fieldwork: When we played the game in the classroom there was a high level of excitement and then much more serious and informed discussion about some of the realities of rural environmental and health issues. Then we visited the Valley Trust and the quality of engagement with local people and health and development issues was much better than in past years when they went in cold. The language and ideas of the game became a spring-board for getting involved in environmental issues (College of Education lecturer).

Environment education centre: The game and picture prepare the pupils with images and language so that they can interpret the environment when we go out together (EE field staff).

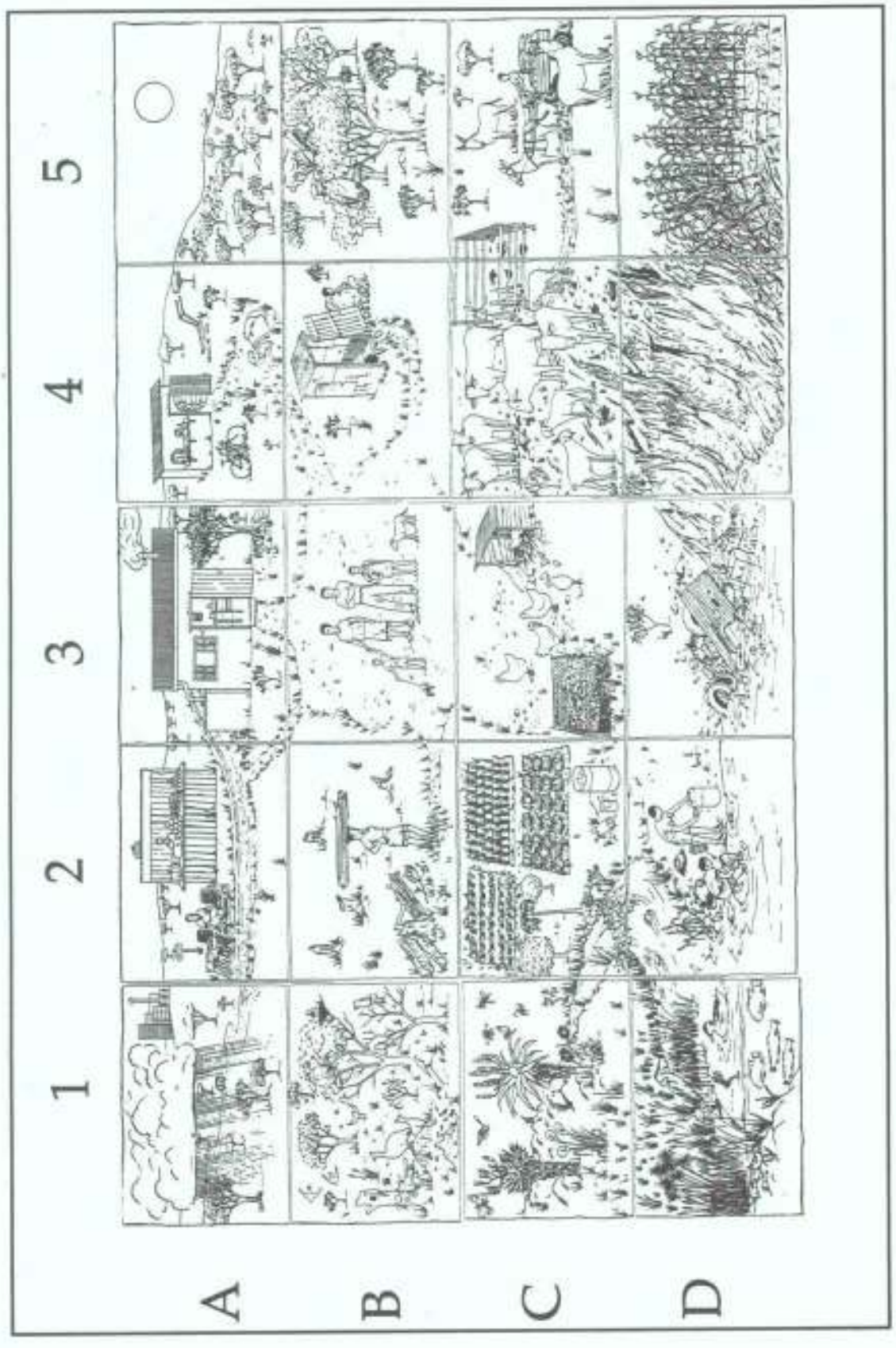
Primary school: The children's own pictures of the school were where all of the excitement and action was but we would never have got there without the ideas in the pictures to spark it all off (Year 3 teacher).

These comments illustrate how the integration of images and words, mobilised in different picture-building contexts and activities, have given rise to a wide range of social processes of co-operative environmental and health problem-solving.

Note: The Madlusuthe's Farm Enviro-Picture-Building exercise used in this module is one of a number of innovative environmental education activities published by SHARE-NET, PO Box 394, Howick 3290, South Africa

RESOURCE 1

MADLUSUTHE'S FARM ENVIRONMENTAL AND HEALTH ISSUES



RESOURCE 2

THE CHANGING ORIENTATION OF THE EXPERT

By the 1970s the environmental and health concerns of the rural peoples in many parts of the world had become the province of numerous development experts and environment agencies. Early expert-directed approaches to environmental education were thus centred on assessing needs, creating awareness and developing sustainable values and behaviour in rural community settings. Education was seen as a 'top-down' information and technology transfer through external social intervention to uplift the poor and suffering. These orientations achieved prominence as they were the common sense ideas of environment and health education specialists who already knew or could scientifically work out the solutions to community health problems.

These communication and intervention approaches have been applied, challenged and modified over the last few decades. The expert is now more commonly seen as a facilitator working in communicative partnership with 'grass-root' interventions by the communities themselves. This apparently radical change in orientation may essentially be little more than a subtle shift. In many cases a participatory rhetoric with its new words and ideas centred on local empowerments is underpinned by ideals of social change - but often with a social engineering intent. The health professional is thus more firmly established as an 'expert voice communicating among/to rural people'. This outsider position, and the sources of ideas and power relationships are seldom examined as experts talk to each other about how others should be educated, convinced and helped so that environment and health might be improved.

These historical patterns of interaction, changing roles and power relationships have created rural and urban 'communities of others' who have become the focus of education activities of health experts and environment agencies. Many of the prevailing approaches to education that professional health educators appear so certain of may need to be examined against some of the realities of rural community experiences of their endeavours.

The social realities of many rural development contexts is that 'communities' soon learn 'how to facilitate' and to work with those agencies that can deliver the most benefits. Others, however, soon tire of being researched and want the money that is solicited by development agencies but seldom gets through to them unless they do what the developers want. One 'frequently' facilitated rural man told me that in the early days it was easier because the people were always shown and told what had to be done. Now, he said it was getting harder because the development workers wanted to get the ideas from the people. They would thus listen to the community and wait until the people told them what they needed. For the community to get health benefits, the needs had to be those that the 'bosses would allow' (i.e. funders saw as important or possible).

This brief overview of some of the changing orientations to health and education suggests that we may need to pay more attention to the social processes and power relationships within environmental education.

RESOURCE 3

THE ENVIRO-PICTURE-BUILDING RESOURCE

The first picture-building cards were developed by the training school of a timber company. The activity was 'delivered' as a three stage training routine: picture-building, problem-solving and action-taking. Its rural development intent was to create environmental awareness and to foster better health and more sustainable living among rural African plantation workers. The module was a popular training session involving the picture-building game, problem-solving replacement cards and a practical session during which participants were taught how to make a trench garden.

An early communication ('tell them in ways they will understand') approach is encapsulated in picture-building Activity 1. The purpose of the activity is to enable us to explore how social engineering predispositions can shape community education in rural development settings. Some features of early direct delivery/training approaches may be somewhat shocking to us today but features of this outlook may underpin much of what claims to be facilitatory, participatory and co-operative environmental education today.

Picture-building Activity 2 examines a more recent approach where participants play the game to open up some ideas and possibilities before being challenged to explore their surroundings by drawing pictures or by taking photographs of local environmental and health issues. In these more participant-driven orientations, environmental educators often strive for, but may not always attain, more meaningful processes of co-operative community problem-solving.

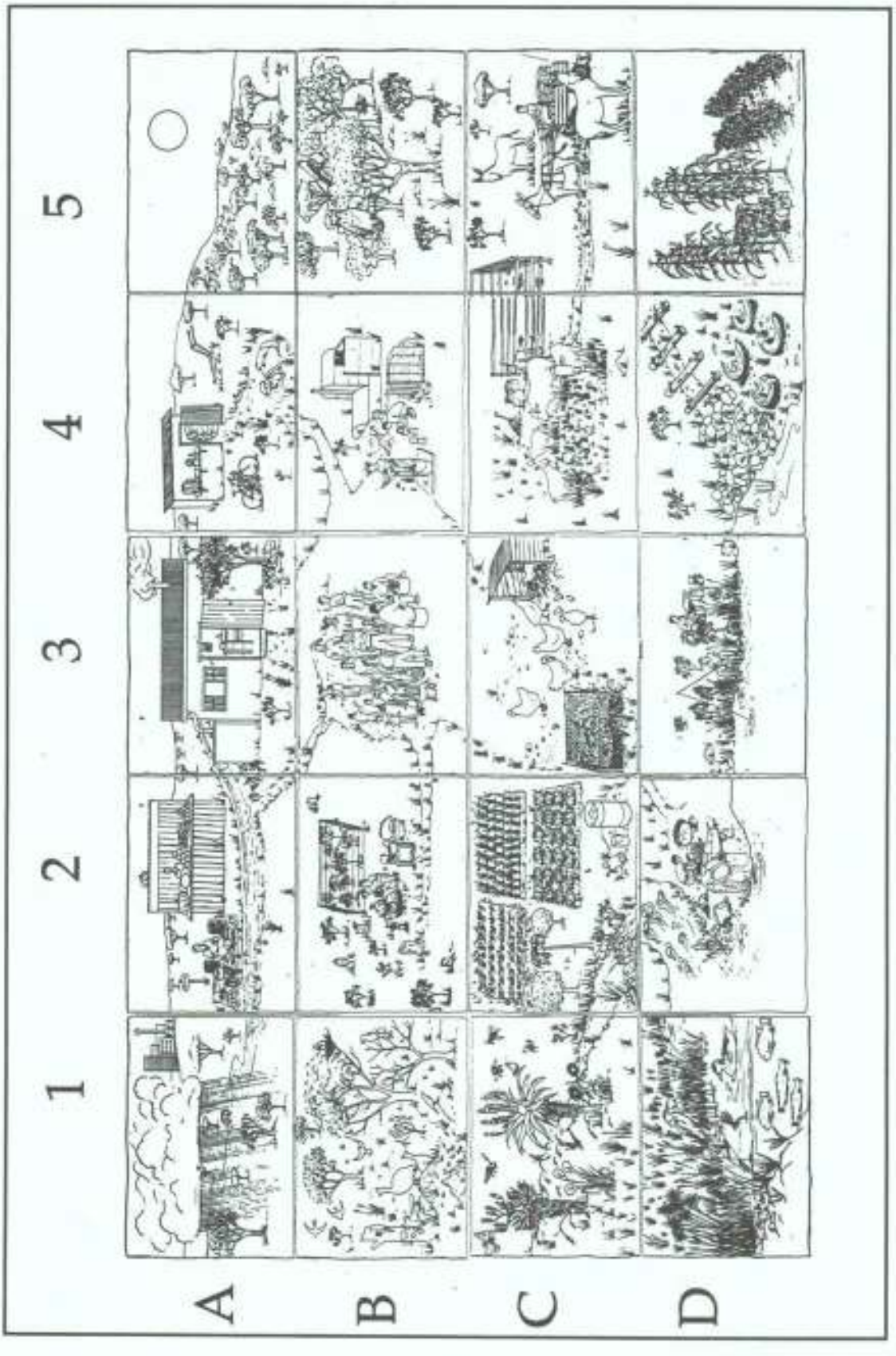
A similar critical exploration of ideological predispositions and methodological choices was a central theme in the development of the Enviro-Picture-Building resource. The value of the pictures for mobilising a 'symbolic capital' (words and ideas) with which to see and to engage with the environment was noted early on in development work with teachers and rural health workers.

Note:

Whilst developing this resource, the author noted that participants were better able to initiate discussion and to pick out environmental issues in the landscape after building pictures. Prior to this, teachers often complained of having to draw field observations out of students. After experiencing the capital of images and language in the picture-building game, students had a lot more and more meaningful to say more readily. The narrative was also less of a guessing game of 'what is in the teacher's head' and more like a tentative constructing and weaving of stories with symbols that had the capacity to 'reveal' a narrative in the landscape.

RESOURCE 4

MADLUSUTHE'S FARM: PROBLEMS SOLVED



RESOURCE 5A

SKETCHING SCOPE

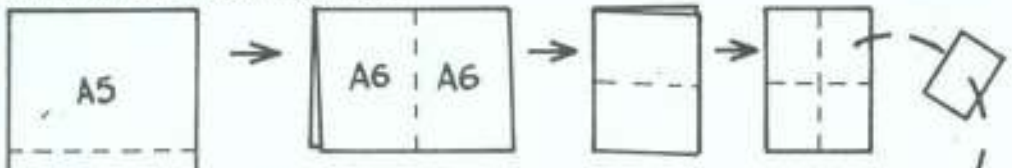
Build a picture of a local environment with sketches drawn using a **SKETCHING SCOPE**

To make one you will need:



String; Cutting knife; Small milk carton; Cellotape; Stapler; A4 scrap paper.

How to make a sketching scope:

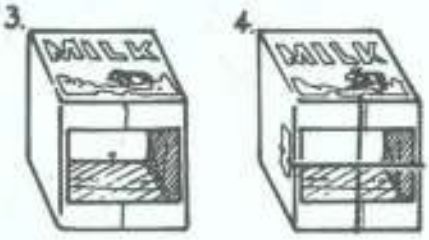


Fold to an A6

. . . then cut out one small block and use it as a template for the window you will cut into the bottom of your milk carton.



Fold in top and staple inside.



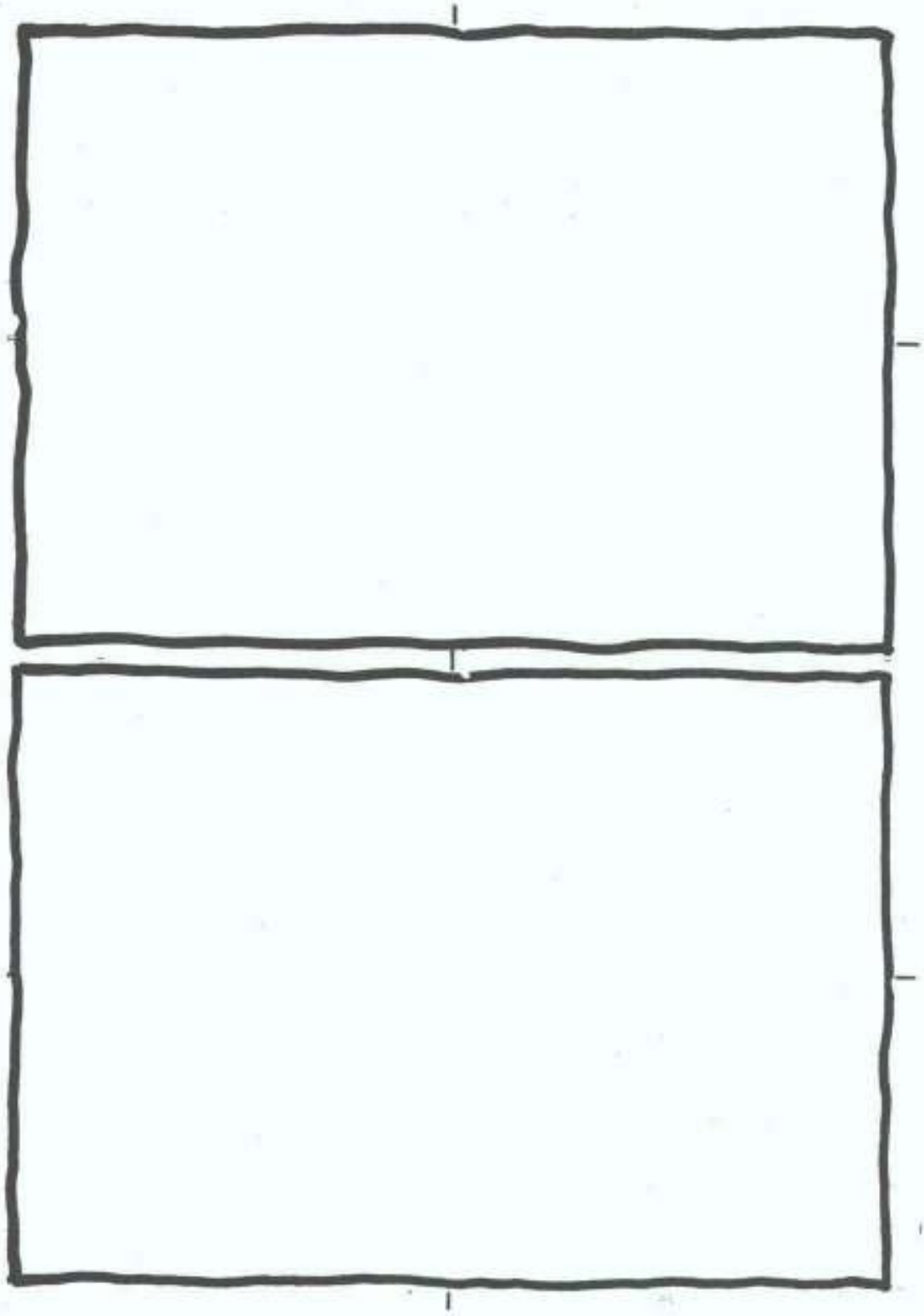
Cut out small window in the bottom. Tape string across centres of window.

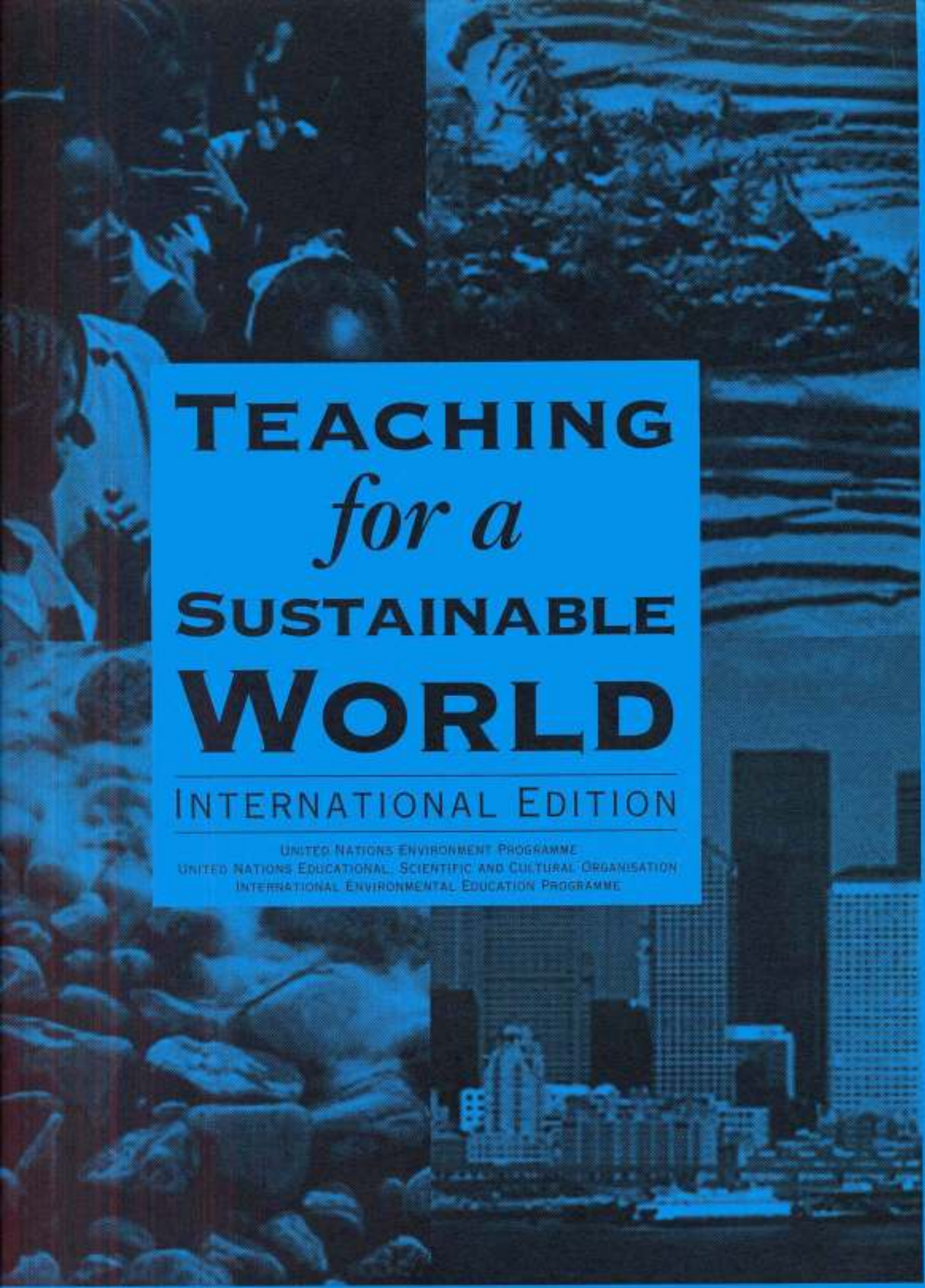


Sight through sketching scope to draw pictures.

RESOURCE 5B

SKETCHING SHEET





MODULE 13

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP

AusAID

COMMUNITY ACTION *for* SUSTAINABLE DEVELOPMENT

MICHAEL SINGH
CENTRAL QUEENSLAND UNIVERSITY
AUSTRALIA

INTRODUCTION

This workshop provides an introduction to the work of citizens engaged in community action for sustainable development and global education. Informed and active citizens bring together knowledge and practice in collaborative action. As such, this workshop provides participants with an opportunity to consider what Australian teachers might teach about community action, sustainable development and global education.

The workshop shows participants some of the ways in which people have taken on the role of global citizens in full cognisance of the interdependence of the peoples and countries of the world, and provides an opportunity for them to consider what we can do about issues of sustainable development and global learning.

The workshop is suited for use as a component of an education studies course addressing issues of social justice, or as an introduction to education for active citizenship and development education in curriculum and teaching studies courses.

OUTCOMES

The activities in this workshop will enable participants to develop:

- an understanding of the nature and scope of educating citizens for community action, sustainable development and global education;
- an understanding of the significance of these areas for their teaching;
- skills to evaluate education activities in this area; and
- the ability to plan themes and activities which articulate environmental and development education relevant to their areas of teaching.

WORKSHOP OUTLINE

The workshop consists of six activities organised around:

- three key concepts, namely, the nature and practice of community action, sustainable development and global education;
- an examination of the forms community action for a just world takes;
- key questions such as:
  - What can global citizens do to contribute to community action for sustainable development and global education?

- What can teachers do?
- What do participants need to learn?

- participation in small group work, games, mini-lectures, debriefing activities and, time permitting, a guest lecture; and
- a review and consolidation of key concepts and themes.

1. Warm-up Activity and Workshop Overview

2. Introductory Mini-lecture on Education for Informed and Active Citizens

3. Mini-lecture and Group Activities on Responsible Travel

- Group activities include:
  - 'Cardgame'
  - 'Diamond Ranking'
  - 'Brantub'
  - 'Flowcart'
- This activity concludes with group reports and a mini-lecture on guidelines for responsible travel.

4. Case Studies of Global Citizen Actions

- Small group activities are used to analyse four case studies:
  - Community action for fair trade
  - Ethical investment
  - People-to-people projects
  - Human rights
- Small group reports and whole group discussion conclude these case studies.

5. Debriefing and Evaluation

6. An Extension/Optional Activity may include a guest speaker/interview or further research

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Workshop Overview

OHT 2: Ethical Guide to Responsible Travel

RESOURCES

Resource 1: Tourism Can Damage the Physical Environment: As a Tourist What Can I Do?

Resource 2: Tourism Can Have a Major Impact on Indigenous People: As a Tourist What Can I Do?

Resource 3: Tourism Has a Drastic Effect on Women and Children: As a Tourist What Can I Do?

Resource 4: Community Action for Fair Trade

Resource 5: Ethical Investment

Resource 6: People Working for Change: People-to-People Projects: Tackling the Causes of Poverty

Resource 7: Amnesty International: Working for Human Rights: A Case Study

READINGS

Reading 1: Education for Informed and Active Citizenship

Reading 2: Ethical Guide to Responsible Travel

Reading 3: Community Action for Responsible Travel

B) TO OBTAIN

Activity 3: Cards, slips of paper, chart or poster paper.

ADDITIONAL READING

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1. Introduction to the Workshop

A. Warm-up Activity

- Ask participants to write and discuss their explanations of the following concepts:
  - active citizenship
  - community action
  - sustainable development
  - global education
- Ask participants to write and discuss their knowledge of organisations such as:
  - aid agencies
  - Amnesty International

B. Workshop Overview

Display OHT 1 and summarise major stages and tasks involved in the workshop.

2. Introductory Mini-lecture: Education for Informed and Active Citizenship

Use the information in Facilitator's Reading 1 to present a mini-lecture on the importance of education for informed and active citizenship. Points to cover include:

- Recent developments to reconstruct the study of citizenship
- Definition
- Focus on active citizenship not knowledge alone
- Socially-critical objectives for citizenship education
- Social movements, citizenship education and active citizenship
- National and global examples of community groups.

3. Ethical Guide to Responsible Travel

This section of the workshop is based upon an introductory mini-lecture, a series of group activities and a culminating activity (whole group reporting and whole group discussion).

A. Mini-lecture or Discussion

Use the ideas in Facilitator Reading 2 as the basis for a mini-lecture/whole group discussion on the benefits and costs of tourism. Use OHT 2 as a guide.

B. Small Group Activities

- At this point divide participants into four groups, and have each group undertake one of the following activities:
  - Group A: Card game
  - Group B: Diamond ranking (Resource 1)
  - Group C: Brantub (Resource 2)
  - Group D: Flowchart (Resource 3)
- The instructions and resources each group needs are outlined below. Note that

the 'statement boxes' on Resources 1, 2 and 3 will need to be cut up and pasted on cards in advance. The instruction sheets could be distributed to group leaders in advance of the workshop to enable them to prepare for the group activities.

Small Group A: Ethical Guide to Responsible Travel: Card Game

Group leader's instructions: Supply each participant with four slips of paper on each is written the following statement:

What we as informed and active citizens could do to be ensure responsible travel is to...

- On each slip participants write their ideas which would complete this statement.
- Once participants have completed the four endings to the given sentence:
  - the slips of paper with the statements on them are collected, shuffled like cards and three 'cards' are dealt to each group member;
  - the remaining 'cards' are placed face down on the table.
- Each person in the groups looks at her/his 'hand', and puts onto the 'pool' of cards in the centre of the table those statements which they themselves wrote plus any statements with which they disagree.
- In turn they take from the 'pool' of cards on the table other statements.
- This process continues for three to four rounds, discarding and picking up 'cards' until they have a 'hand' with which they are reasonably satisfied.
- At the end of this stage of the card game, each participants should have the best 'hand' they can get, in so far as it is one each person finds most agreement with the comments written on the slips of paper.
- Each person then reads the comments on the cards in her/his 'hand' and explains why they chose these particular cards.
- A summary of the various actions suggested for informed and active citizens could be prepared on the blackboard, OHT or chart paper for a group report.
- Group leaders report their findings back to the whole class for general discussion.
- Discussion of the actions proposed in terms of initial expectations for action might focus on:
  - the range of potential actions;
  - the reasons for and against particular actions; and
  - the commitment to act or not.
- As a follow-up activity participants could research other examples of informed and active citizens addressing issues of responsible tourism in other countries.

Preparation required:

- Four slips of paper per participant

Small Group B: Ethical Guide to Responsible Travel: Diamond Ranking Activity

Group leader's instructions:

- The 'diamond ranking technique' provides a non-threatening and engaging way to clarify and alert participants to key concepts and issues in teaching and learning about sustainable development, global education and active global citizenship from different perspectives.

- 'Diamond ranking' is an activity in which small groups rank nine statements according to the general criterion of their significance, importance or interest, in this case for responsible travel.
- The pairs or small groups should decide among themselves what is meant by 'importance', 'significance' or 'interests,' thereby enabling them to make a relevant and valuable contribution to the discussion.
- Skills used and developed in this activity include discussion, negotiation of meanings and consensus building.
- Sets of nine titled or numbered statements should be selected from those given on the Resource 1:
  - each set of statements should be cut up and placed in an envelope;
  - pairs are then given an envelope containing the nine statements; and
  - participants are asked to rank the statements in 'diamond' formation:



- The most 'significant,' 'important' or 'interesting' statement is placed at the top of the diamond:
  - the next two are placed in second equal position;
  - the three across the centre are fourth equal, while the next two are seventh equal; and
  - the statement placed at the bottom of the diamond is the one considered by the pair to be the least significant, important or interesting.
- When pairs have completed their task, they form into sixes, and
  - each pair explains and justifies its ranking to the other two pairs;
  - the six then try to negotiate a consensus ranking for the group as a whole.
- Plenary reporting back and discussion should then follow:
  - both consensus and disagreements about the rank ordering of the statements should be discussed.

Small Group C: Ethical Guide to Responsible Travel: Brantub Activity

Group leader's instructions:

- The 'brantub activity' provides a lively way of introducing information about, and major issues involved in making judgements, in this case about the ethics of responsible travel.
- This activity encourages a sharing of views among group members and gives individuals the time and space in which to reassess, adjust and develop their own ideas in the light of what they have read and what their peers have said.
- The statements given on Resource 2 provide a range of suggestions relating to concerns about ethical travel:

- these statements could be photocopied onto separate sheets or cards;
- these cards are then put into a 'brantub' and thoroughly mixed;
- participants are then invited, one by one, to come to the 'brantub', to pick out a statement and read it silently.

- After each person has read his/her statement:
  - participants form 'buzz groups' of 2-3 people; and
  - discuss the meanings and implications of the statements and whether or not they concur with the points made.
- New 'buzz groups' are formed after each statement has been discussed so participants have an opportunity to discuss these issues with as many of their peers as possible about the different concerns about ethical travel.
- A whole group plenary discussion should follow.

Small Group D: Working for Change: Flowchart Exercise

Group leader's instructions:

- The 'flowchart exercise' provides an interesting and engaging way to introduce the range of work involved in securing sustainable development and global education. It encourages discussion and consideration of different views, some of which may not otherwise be heard, and it can help clarify the practices which participants' value.
- Working in small groups participants are asked to produce a flowchart or graphical representation of a development plan by interrelating a selection of good practices for responsible travel. A flowchart, rather than a linear sequence, allows for greater imagination in exploring relationships between aspects of working for change. In trying to achieve agreement over the construction of the flowchart, participants will need to accommodate differing views, although where consensus is not achieved, alternative possibilities should be represented on the chart and discussed.
- Each group has a set of statements (see Resource 3) outlining good practices for responsible travel on sheets of paper which they can arrange in any kind of pattern, cluster, sequence or flowchart they wish.
  - When a pattern has been agreed upon, the statements on the small sheets of paper should be glued to a large sheet of 'chart paper'.
  - Lines, arrows, pictures and comments should be added where appropriate.
  - Participants can adapt or add to the good practices with suggestions of their own.
- When finished, groups come together as a whole in order to explain their flowcharts and to report on the main points of discussion

Mini-lecture: Community Action for Responsible Travel

This is the conclusion to the section on active citizenship as an ethical or responsible traveller.

- Ask each of the four groups to report to the whole group (displaying any material they produced) on their individual workshops. Also ask for comments on the type of learning experience used in the group activity.
- Use the information in Facilitator Reading 3 to lead a group discussion on:
  - Personal actions - how personal actions can relate to or be a part of global citizen action; and

- Community action - based on debt reduction and anti-sex tourism campaigns

4. Global Citizen Action

Participants work in small groups to make case studies of three examples of global citizen action.

- Form three small groups, and give members of each group a copy of a case study based on one of the following Resources ensuring that each member of the group gets a copy of the same one:
  - Group A: Resource 4 - Community Action for Fair Trade
  - Group B: Resource 5 - Ethical Investment
  - Group C: Resource 6 - People Working for Change: People-to-People Projects: Tackling the Causes of Poverty
  - Group D: Resource 7 - Amnesty International: Working for Human Rights: A Case Study

  Depending on total group size, several working groups may be formed for each case study.
- Participants read their resource sheets - perhaps even over a break - or the sheets could have been given out a day or two in advance for pre-reading.
- Each group discusses its case study, focusing on the lessons they learn from it about:
  - informed and active citizenship;
  - community action;
  - sustainable development; and
  - global education.

  Specifically, they should consider the following questions, recording answers to them for subsequent reporting:
  - What skills, competencies and knowledge are associated with the work of active citizens reported in the Reading?
  - What are the moral, political, social and economic reasons underlying the forms of community action reported in the Reading?
  - How is the community action project being undertaken by these active citizens contributing to sustainable development?
  - What knowledge and competencies might be taught participants as part of a programme in global education?
- Following the small group discussions, a group leader should report to the whole group on the participants' deliberations.

5. Debriefing and Evaluation

- Review main points raised in this workshop, referring to points on OHT 1.
- Ask participants to prepare a fax for sending to their national government or an international government agency such as UNESCO, addressing issues and advocating action which they as citizens and educators see as being important based on the work undertaken during the workshop.

6. Extension/Optional Activity

- Invite a member of Amnesty International or a community action group working on international issues to speak to participants about the work of active citizens, community action, sustainable development and global education.
- As a follow-up to this workshop have participants research or study groups and organisations working for social justice throughout the world. Have the participants focus on the social competencies needed and used by active citizens working in these groups. Refer to the *Amnesty International Handbook* (1992) for further details.

OHT's

OHT 1

Workshop Overview

- Introduction to concepts
- Education for informed and active citizenship
- Responsible travel
- Case studies of global citizen actions
- Debriefing and evaluation

- What are the benefits and costs of tourism?
- Tourism can damage the physical environment
- Tourism can have a major impact on indigenous people
- Sex tourism has a major impact on women and children
- Community action for responsible travel
  1. Personal travel
  2. Community action

RESOURCE 1

TOURISM CAN DAMAGE THE PHYSICAL ENVIRONMENT: AS A TOURIST, WHAT CAN I DO?

If the facility exists, travellers might stay with local people for part, or all, of their holiday. This will reduce the need for expensive, resource-intensive hotels and other facilities, which can damage the environment.

Travellers should drink and eat local food where practical; ask a local person whether it is satisfactory from a health point of view. This will create less litter from packaging, will save money in importing costs and will encourage local self-sufficiency in food production, for the country concerned.

Tourists should consider staying in one place. This will save precious resources such as petrol and oil, and will reduce pollution. It will also be more relaxing and, after all, it is impossible to see everything.

Travellers should walk, cycle or use local buses if they want to look around.

Tourists should not take four-wheel drive tours unless they absolutely have to; remember that these vehicles do enormous damage to the top-soil.

Travellers should not hunt animals, or buy product souvenirs, but take photographs instead.

Trekkers should try to take only biodegradable items with them on their travels and carry out any rubbish. They should bury it only if they have to and make sure that this is well away from any water sources.

Trekkers should take their own fuel stove (gas, kerosene, etc.) rather than expect to use precious trees for cooking. (While this does necessitate the importing of oil-based products in some cases, the ecological impact is still less than using firewood.) This may also mean taking a jacket for warmth at night.

If there is not a public toilet in the vicinity, trekkers should bury faeces and/or urinate away from water sources and people's villages.

RESOURCE 2

TOURISM CAN HAVE A MAJOR IMPACT ON INDIGENOUS PEOPLE: AS A TOURIST, WHAT CAN I DO?

Before you leave for your holiday try to learn as much as you can about the customs and history (especially local versions) of the people whom you will be visiting.

Try to learn some of the language of the country in which you will be travelling.

When you arrive, be sensitive to local customs. Listen, observe, learn and treat people with respect.

Ask permission before taking photographs of people (in some countries it is illegal anyway). Try using a local guide to help show you the best areas and pay if asked to do so. Respect should dictate your choice of shots.

Be particularly aware of the impact of taking photographs. Telephoto lenses are not a solution to capturing images of individuals - they too can offend.

If local people want to look through your camera, let them. They may want to take a picture of you. Should they want a copy of your photograph, do send it.

Do not take pictures of people through the window of a bus or car. Wouldn't you feel like you were in a human zoo if this were happening to you?

Eat local food and drink the local drinks to share the experience with your hosts.

Remember that other people have different concepts of time and ways of looking at the world.

Dress modestly, especially in and around temples, mosques, churches and shrines. Resist the temptation to bathe, or sunbathe naked or near-naked, if it is forbidden by local law, or if it makes local people uncomfortable.

Respect local religious customs, and don't make promises that you can't keep.

Avoid drugs, including alcohol, if you know that it will cause offence.

Don't expect any special privileges - you are one of many tourists who visit.

Be aware that any sexual relationships you form there are almost always between that of the powerful (the one with the money) and the powerless (the desperately poor).

Be careful 'bargaining' - your bargain is only possible because of the low wages paid to the maker.

RESOURCE 3

TOURISM CAN HAVE A DRASTIC EFFECT ON WOMEN AND CHILDREN: AS A TOURIST, WHAT CAN I DO?

In your relationships, respect the rights of women, men and children.

Be careful in your contacts with children and remember that they can be vulnerable, despite your good intentions.

If it offends local customs, do not sunbathe topless or totally naked where there are children around.

Consider your own health. In some countries there are tens of thousands of HIV-positive carriers, and many of these are active in the prostitution scene.

Find out about their issues such as population, health care and the environment, by reading The New Internationalist and similar literature.

Talk to the local people, for example the room service helper, the store keeper, the bus driver, the guest house owner, farmers and fishers, about their country.

Look around and analyse what you see. Try to investigate the social and economic forces which are shaping the destiny of the place that you are visiting.

Think about the impact of tourism on the community that you are visiting.

Try to imagine how the country that you are visiting might meet its basic needs and become self-reliant.

Talk to fellow travellers about their experience of the country - do not just swap hotel and restaurant tips.

Support legal action in your country and internationally to curtail sex tourism and the sexual abuse of children by tourists.

RESOURCE 4

COMMUNITY ACTION FOR FAIR TRADE

Community Aid Abroad (CAA) is an example of active citizens engaging in organised, collaborative community action for sustainable development and global education. CAA is an Australian-based secular organisation which is not party-political; there are many similar organisations throughout the world — you may know of one in your country. CAA is, however, socially aware and its aim is to both improve the living conditions of people and also to support the poorest of the poor in their struggle to overcome poverty and associated injustices. Many CAA projects assist the poor in forming co-operatives and strengthening village communities. This will ensure they have access to resources that previously had been denied them. For instance, a village irrigation scheme may only benefit the wealthy landowners unless the poorest villagers have the power to determine where it goes and who gets the water. In addition to assisting victims of major disasters overseas, CAA attacks the causes of poverty on two main fronts:

- the support of self-help community-based projects in developing countries and amongst Australian Aboriginal communities; and
- educating Australians about the causes of poverty and inequality.

Supporting Self-help Community Projects

CAA funds projects that are initiated and carried out by the people who directly benefit from them. CAA believes people are motivated towards change when they control that change. CAA supports a broad range of projects including health, training, production, education, employment, agricultural, literacy and motivational projects. Some are integrated community development projects encompassing many of these areas. Some focus specifically on the position of women. Care is taken to ensure that projects are in harmony with the local environment and culture.

Raising Socially Significant Issues

As well as encouraging discussion in the Australian media on aid issues, CAA conducts a variety of interesting education activities (Waddell, 1988). These include:

- conferences and seminars on CAA activities and other matters of public concern;
- in-service programmes for primary and secondary teachers;
- the provision of written and audio-visual materials for sale or hire;
- speakers and presentations to interested groups, organisations and schools;
- Youth Programmes run by and for young people; and
- study tours to some of the areas where CAA is involved which give first hand experience of projects in action.

Organised Collaborative Citizen Action

Community Aid Abroad focuses its work on attacking the causes of poverty through projects at the village level. But this is only one side of the coin. Experience has taught CAA that many of the things that keep people poor are rooted in the attitudes and actions of 'First World' countries. If no action is taken to address structural issues, such as international monetary policies, the excellent work done at the village level will be undermined by the debt crisis at the national level. CAA is well-placed to play a significant role in the elimination of these causes. The following are examples of CAA's recent campaigns.

Infant Formula Campaign

The international campaign to stop the unethical marketing of baby milk achieved a major success in 1981 when the World Health Assembly adopted an appropriate marketing code. There is still room for improvement, and vigilance is essential. But the fact remains that the campaign has saved thousands of lives.

Debt Campaign

Every year, poor nations are crippled by debt repayments that far exceed the flow of aid and investment money from the rich world. Between 1982 and 1987, for example, the net result was the 'Third World' 'aided' the world's rich nations by US$220 billion. International campaigns have been an important factor in gaining some concessions from lenders. Some of the poorest African countries, for example, now have the option of writing off one-third of their debts, reducing interest rates or extending the term of their loans. This is a start, but much more needs to be done.

Dangerous Drugs Campaign

An international campaign by the Medical Lobby for Appropriate Marketing has led to the withdrawal or modification of 12 drugs from the market. Each year

millions of poor people spend their money on dangerous or useless drugs. In the Philippines, a dangerous antibiotic combination of Chloramphenicol/ Streptomycin, used to combat diarrhoea, was the top-selling drug. Following a campaign, it has been withdrawn from sale. A light beer tonic 'for the relief of stress' which contained arsenic and strychnine has also been withdrawn.

Becoming an Informed and Active Citizen

CAA's project work is immensely important to hundreds of thousands of people. But the actions of governments and large companies can affect millions. So CAA invites globally oriented citizens to join Campaign Partners, an initiative designed to complement CAA's overseas project work. Campaign Partners is a network of active citizens who want to support the struggle against such major causes of poverty as environmental degradation, militarism, debt and unfair trade. Campaign Partners concentrates its efforts in this area. To help spearhead campaigns for change, Community Aid Abroad has set up a Public Policy Unit, including a lobbyist and a researcher. To pay for this, CAA cannot infringe on funds intended for its project partners. Furthermore, governments do not support this work, something which informed and active citizens lobby their governments to do. CAA is asking citizens to contribute directly to this vital work by joining Campaign Partners and giving a donation every three months.

By joining Campaign Partners, citizens are recognising the need for direct community action in 'First World' nations to address global concerns. Citizens can make an individual donation and/or join one of CAA's community Groups. Teachers are encouraged to join groups such as these, or to form a group in their area, workplace or school.

The CAA community action groups develop their own interests and priorities and decide which projects they will support. Some are principally involved in fund-raising by organising dinners, street stalls, film nights, or wine bottling. Others are interested in raising their own awareness of environmental and development issues, and so conduct discussion nights and public meetings as well as becoming involved in education and community action campaigns. For example, some community action groups supported the campaign to prevent the promotion of dangerous drugs in developing countries. Under the Community Partners initiative citizens and the CAA have complementary roles.

Citizen's Role:

- Citizens give a small amount of money each quarter - more if they can afford it, less if they are not very financial.
- Citizens can take part in Campaign Groups, help plan community action, write letters and help with media work.
- Citizens who are not able to take part actively in the campaigns, can make financial contributions which are a real help in initiating a groundswell of community support for change.

Community Aid Abroad's Role:

- CAA's Public Policy Unit spearheads the campaigns and provides resource material; and
- Citizens receive a quarterly campaign pack with updates on specific campaigns and suggestions for community action.

Questions for Discussion

a) What skills and competencies are associated with the work of active citizens reported in Resource 4?

b) What are the moral, political, social and economic reasons underlying the forms of community action reported in Resource 4?

c) How are the community action projects being undertaken by these active citizens contributing to sustainable development?

d) What knowledge and competencies might be taught participants as part of a programme in global education?

RESOURCE 5

ETHICAL INVESTMENT

Citizens can invest in companies which profit from:

- exploiting workers in 'Third World' countries;
- destroying or polluting the environment;
- manufacturing and selling armaments;
- promoting alcohol or tobacco; and
- testing on laboratory animals.

Alternatively, informed and active citizens can make ethically and socially responsible investments (Baumol and Blackman, 1991; Bruyn, 1991; Luthans, 1971; Pearce, Barbier and Markandya, 1990; Simon, Powers and Gunnerman, 1982). The Ethical Deposit Funds operated by aid agencies provide one such means for ethical investments for concerned citizens.

Aid agencies concentrate their support on community-based, self-help development projects, and are active in Africa, Asia, the Pacific and Latin America. There is public recognition of the work of aid agencies and their views command attention from government, the media and the public. Funds for aid agency operations are derived mainly from public donations, government grants and the profits earned by subsidiary companies which import and sell through their shops and by mail order, handcrafts made by artisans in the 'Third World'. The Ethical Deposit Fund has been developed for the purpose of providing an additional contribution to the income of aid agencies.

Ethical Investments

By making a conscious decision about how investments are to be used, informed and active citizens can, in a small but nonetheless significant way, help change the world.

Citizens Can Invest with Confidence

With an Ethical Investment Fund, citizens can be sure that their money will NOT be used by exploitative or socially irresponsible companies or institutions. Citizens can be sure that their money will NOT be invested in arms, alcohol, tobacco, uranium, gambling, or environmentally damaging industries. Why? Because aid agencies take advice on their investments from specialists in socially responsible fund management. A typical Trading Ethical Investment Fund allows:

- direct assistance to artisan communities overseas, allowing for advance payments (often up to 6 months ahead) to purchase raw materials, and so artisans can receive wages whilst goods are being made;
- the minimising of expensive bank finance whilst expanding its range of products and orders;
- citizens to invest their money ethically and where it is most needed; and
- a fair return on the money invested by citizens.

Investments

The Fund is a positive ethical investment in that the surplus is directed towards the work of aid agencies. It is also a non-directed ethical investment because no investments are made in companies whose activities are believed to cause social and/or environmental damage. To ensure this, aid agencies track and carefully monitor all investments.

Security

The funds deposited are held in a separate trust account until they are invested. The Ethical Deposit Fund is limited to investing in government, semi-government and securities guaranteed by a government, bank securities and debentures, promissory notes and other securities having a sound credit rating with a recognised credit rating service, to deposits with authorised dealers in the short-term money market, or to other ethically sound investments approved by the aid agency. Funds are readily available for repayment on maturity, or for earlier redemption if required by the depositor. Interest received on the investments (after payment of interest due to depositors) is used to augment the agency's income.

Investors Can Choose Their Interest Rate

Investors choose whatever interest rate they feel they need, it has been up to a maximum of 7.5% p.a. Alternatively, investors can forgo interest altogether, thus considerably increasing the benefits that their money can bring to the aid agency and its project partners.

Terms and Interest Rates

Deposits, which are unsecured, are available for periods (at the option of the depositor) of 6 months (from date of receipt), or for periods of 1, 2, 3, 5 or 7 years, at interest rates (at the option of the depositor) of 0, 2.5, 5, 7.5% p.a. Interest is fixed for the term of the loan, except that the aid agency normally reserves the right to vary the rate of interest for deposits bearing an interest rate of 7.5% and above in the event of a marked change in general interest rates. In such an event, four weeks' written notice of variation is given to all such depositors who have the right

to either convert their deposit to a new rate or to redeem it (or a combination of the two).

Funds deposited for 1 year or more mature on the last day of the month in which the deposit was received, after the appropriate period. Funds may be withdrawn prior to maturity provided that six weeks' written notice of withdrawal is given. No adjustment of interest rate is made in the case of early redemption of funds. Interest on funds deposited for 6 months is payable on maturity. Interest due on funds deposited for 1 year or more is payable annually on the last day of the month in which the funds were received. Interest may (at the option of the lender) be paid either by cheque or compounded and paid on maturity. A deposit certificate is issued to each depositor acknowledging the funds deposited and setting out details of terms and interest rates. Funds are only accepted on the appropriate Application Form.

Citizens Can Invest in a Better World

Any profits from the Fund are directed to the aid agency's development projects. The profits provide seed capital, collateral and revolving loan funds. So for years to come, investor's money can continue to empower the aid agency's project partners to work for change and social justice.

Citizens' Investments Can Benefit These People and Their Future

In **India**, aid agencies help to fund The Institute of Self-Management. The institute's wide-ranging activities include the establishment of 20 village credit unions and an associated district federation, training for barefoot lawyers, the provision of legal aid, and training in leadership, awareness, communication skills and credit union management.

In **Bangladesh**, a revolving loan fund for 4 villages in the Gopalganj district has been extended. The fund provides loans for both men and women for small business, raising goats, paper-bag making, and the purchase of rickshaw vans. Leadership training is provided, as well as functional literacy courses for 500 adults.

In the Mt. Hagen area of **Papua New Guinea**, investors' deposits help to fund a pilot credit scheme designed to provide loans to rural women wishing to develop self-employment initiatives. Such schemes are a highly effective means of improving the standard of living in rural societies without creating welfare dependency. Women have proved to be reliable credit risks and to have a high success rate in their businesses, but usually they are excluded from traditional credit schemes.

Questions for Discussion

a) What skills, competencies and knowledge are associated with the work of active citizens reported in Resource 5?

b) What are the moral, political, social and economic reasons underlying the forms of community action reported in Resource 5?

c) How is the community action projects being undertaken by these active citizens contributing to sustainable development?

d) What knowledge and competencies might be taught participants as part of a programme in global education?

RESOURCE 6

PEOPLE WORKING FOR CHANGE: PEOPLE-TO-PEOPLE PROJECTS THAT TACKLE THE CAUSES OF POVERTY

The Integrated Agro-Forestry Project - Con Cuong District, Vietnam, is a joint action project of Community Aid Abroad (CAA) and Freedom From Hunger against poverty and associated socio-economic injustices.

Location

Con Cuong District, Nghe An Province, Vietnam.

Implementing Body

Con Cuong District People's Committee.

Background

There are approximately 10 kilometres between Vinh City, the capital of Nghe An Province, and Khe Thoi and Chau Son villages, the two communities involved in a ten year agro-forestry project in Con Cuong District. The road twists and turns northwest, then due west, as you travel inland to the higher elevations of this predominantly mountainous region of Vietnam.

Nghe An is one of the largest and most populated provinces in Vietnam, located in the north-central 'typhoon belt' of the country. There are approximately 2 million people here. As is typical throughout the country, the further inland one travels and the more mountainous the area, the greater the chance of encountering ethnic minority communities - Hmong, Lao, Tai Van Kieu and Don Lai, to name a few. Con Cuong District is located in the centre of the province near the Lao border, and is 90% ethnic minority peoples. The district officials are Tai. People in these areas often suffer from long periods of food deficit, because of lack of access to land and also because of poor soil. Another factor is the cycle where individuals are weakened by the lack of food and proper nutrition (undernutrition and malnutrition respectively). Without a proper diet, men, women and children are much more susceptible to disease (malaria epidemics are a regular occurrence in these areas) so they do not have the energy to carry out their daily activities. So the cycle continues.

The Project

The Con Cuong District People's Committee, together with the Agricultural Bureau and villagers, devised a 10-year plan to improve the nutritional standards of the people. The poorest families within two villages were identified by the villagers themselves to participate in the project.

Each family receives a 50-year lease for a plot of land on the hillsides. They then clear away the scrubby secondary growth on these hills and cultivate and harvest crops according to a cropping schedule mapped out by the village committee. Crops that require a longer growing season, some between 7 and 10 years - such as cinnamon trees - are grown alongside medium and short term crops (tea and vegetables respectively). Crops are grown according to the appropriate growing season. Some require hotter weather, some cooler, while others need a lot of water and some prefer drier conditions. As well as this, crops are planted according to their compatibility (companion planting). For example, farmers have found that leguminous vegetables such as beans and peas add nitrogen to the soil and therefore increase corn yields when grown alongside one another. Farmers have also found that a diverse farming system that includes tree crops interspersed with low crops protects the hillsides from erosion.

In this way the programme incorporates the farmers' knowledge and understanding of local growing conditions with a more intensive growing schedule and access to more land. This results in an increased harvest of both food and cash crops, some of which actually improves the fertility of the soil. The CAA's Programme Coordinator for SE Asia, who visited the area recently commented:

> *It was clear what the villagers thought of their project. We walked for miles through the mud and rain to be proudly shown plots of tea, pineapple, corn and other crops.*
>
> *People say that the agro-forestry project had given them a home for the future and that they felt their young people would stay in the village, as there was something to which they could look forward. The key to the success of this project seems to be secure land tenure for a good length of time, and the enthusiastic involvement of the villagers themselves.*

Citizen Contribution

To assist farmers in the initial stages of labour-intensive land clearing activities, CAA and Freedom From Hunger supported a 'food for work' programme. The contributions of people from 'First World' nations enabled CAA/Freedom to expand this work and establish the necessary tree and shrub nurseries. Some areas have already been planted, but many are still to be planted. There is also a need to purchase vegetable seeds and small portable pumps to service the nurseries. Citizen contributions are helping to build on the renewed hope of the people and spread the benefits further along these two poor communities (Afshar and Agarwal, 1989; Beers, 1990; Dover and Talbot, 1987).

Questions for Discussion

a) What skills, competencies and knowledge are associated with the work of active citizens reported in Resource 6?

b) What are the moral, political, social and economic reasons underlying the forms of community action reported in Resource 6?

c) How is the community action projects being undertaken by these active citizens contributing to sustainable development?

d) What knowledge and competencies might be taught participants as part of a programme in global education?

RESOURCE 7

AMNESTY INTERNATIONAL: ACTIVE CITIZENS WORKING FOR HUMAN RIGHTS: A CASE STUDY

Active citizens participating in Amnesty International campaign for :

- the unconditional release of prisoners of conscience;
- fair and prompt trials for all political prisoners; and
- an end to the death penalty and torture in all cases.

Amnesty is Impartial

Amnesty International believes that human rights violations are worth fighting against wherever they occur. In any single year, this means taking action on some 140 countries. To safeguard impartiality, members do not work for prisoners in their own country.

Amnesty is Independent

Amnesty International is independent of all governments, political factions, ideologies, economic interests and religious creeds.

Amnesty is Accurate

Amnesty International's activities depend on meticulous research into allegations of human rights violations. The credibility and accuracy of Amnesty's research is internationally recognised.

Amnesty is Active

Victims of human rights violations and their families need practical help. Through its network of members and supporters, Amnesty International takes up individual cases, mobilises public opinion, maintains pressure on governments for the release of prisoners of conscience, fair and prompt trials for political prisoners, an end to torture and executions, and improved international standards for the treatment of prisoners.

Amnesty is Supporter-funded

Amnesty International accepts no monies from any government. It is entirely funded by its supporters - informed and active citizens.

Amnesty is on the Spot

Amnesty International representatives observe trials where accepted international standards are at issue, meet prisoners and interview government officials. Amnesty International also works to protect human rights with other international organisations such as the United Nations, the International Labor Organisation and UNESCO.

Amnesty is Effective

Amnesty International works. It does more than expose human rights abuse. Since 1961 Amnesty International has seen thousands of prisoners released, torture condemned and the death penalty abolished in more countries every year.

Amnesty is Community-based

Amnesty International has an active worldwide membership. There are more than 700,000 members in over 150 countries. Members, as informed and active citizens, come from all walks of life and are encouraged to participate as fully as possible in Amnesty International's many activities.

How Real is Need?

Every year, many thousands of people are imprisoned, tortured or killed by governments for what they believe in - or simply for where they were born. A recent Amnesty International report details human rights violations in some 138 countries. In 1989 alone, Amnesty International launched 577 Urgent Action appeals to assist people under immediate threat of torture or execution. In Sri Lanka, for instance, extrajudicial executions, arbitrary arrests and torture escalated dramatically throughout the 1980s. In June 1989 the world watched in horror as government troops fired on pro-democracy protesters and bystanders in Beijing. Within hours, Amnesty International had begun mobilising members to protest against the killings and arrests and try to

prevent further human rights abuses. Within 5 days, 250,000 letters and telegrams had been sent to the Chinese authorities - by September, the total had risen to well over 3 million.

But What Can individual Citizens Do?

Amnesty International's lifeblood is voluntary support of informed and active citizens. Amnesty can use whatever time, skills or money citizens can offer. Collectively, the help of individual citizens makes a difference to the worldwide struggle for human rights. A citizen who becomes a member of Amnesty International can:

- *Join a Group*

Local groups carry out some of the most satisfying and effective civic work on behalf of victims of human rights abuse. There are over 4,000 groups worldwide. These groups work for a particular prisoner of conscience, participate in country or theme campaigns, promote Amnesty International's concerns and activities in the local community, and raise funds to support Amnesty's work.

- *Join an Action Network*

Citizens can work for human rights from their own home. Community action networks operate by getting as many people as possible to send letters or telegrams on behalf of particular cases of human rights abuses. Amnesty's networks include: Prisoners of the Month, Urgent Action cases, Religious, Women's, Trade Union, Medical and Lawyers' Networks.

- *Provide Financial Support*

Amnesty International urgently needs funds to help the victims of human rights abuse. The life-saving appeals, essential research, campaigning and vital publicity work all cost a great deal of money. Any amount citizens can give is gratefully acknowledged. As a Friend of Amnesty International, citizens are kept in touch with the organisation's activities and members can support Amnesty's work as and when they can (Also see Claude, 1989; Larsen, 1978; Power, 1981; Weston, 1989).

Questions for Discussion

a) What skills, competencies and knowledge are associated with the work of active citizens reported in Resource 7!

b) What are the moral, political, social and economic reasons underlying the forms of community action reported in Resource 7?

c) How is this community action project being undertaken by these active citizens contributing to sustainable development?

d) What knowledge and competencies might be taught participants as part of a programme in global education?

READINGS

READING 1

EDUCATION FOR INFORMED AND ACTIVE CITIZENSHIP

Recent developments have seen efforts to reconstruct the study of citizenship. One of the goals of global education emphasises the development of knowledge, skills, attitudes, and values that will enable participants to participate in the deepening and extension of democracy throughout the world. Schools have a particular responsibility to prepare participants for informed and effective participation as citizens in the protection and further development of democracy globally.

The aim of education for active citizenship goes beyond providing participants with an understanding of the workings of government, to develop in them an appreciation of the role of community groups and non-government organisations as instruments of active citizens, as well as motivating participants to become active citizens themselves. 'Active citizenship' refers to knowledge about politics, the workings of national and international political systems, an understanding of how these political systems work, the motivation and the capacity to put that knowledge to good use, and an active commitment to democracy. An active citizen is someone who not only believes in the concept of a democratic society, but who is willing and able to translate that belief into action. Active citizenship is a compound of knowledge, skills and attitudes: knowledge about how society works; the skills needed to participate effectively; and a conviction that active participation is the right of all citizens (Aulich, 1989, p.7).

All citizens have certain social roles, rights and responsibilities in relation to the state. To enable participants to fulfil these roles and to exercise their rights and responsibilities, both now and in the future, certain learning is essential. This learning includes the relevant knowledge, particular skills, processes and attitudes necessary for participants to develop and maintain a thoughtful and practical commitment to democratic principles and values.

In addition to these learnings, participants should also develop the ability to respond efficaciously to the functional demands of institutions of society. No doubt this would include customary knowledge of voter registration, electoral processes, meeting procedures, the division of powers within the state, and the importance of social criticism and dissent. In particular, there is need for a socially critical perspective on the relationship between the ideal and practice of democracy. This involves exploring the contradictions between expression of core values and practices. For instance, schools can provide an environment where participants can test the relationship between democratic ideals and socio-economic realities. It should also involve participant participation in school governance and decision-making. Schools should establish learning experiences characterised by the application and testing of core democratic virtues (e.g. socio-economic justice; freedom; equality; and concern for the welfare of others).

This view of citizenship challenges the notion that political ignorance, cynicism and apathy are necessary for the deepening and extension of democracy, especially given that 'authoritarianism and corruption thrive when a citizenry is confused or apathetic' (Aulich, 1989, p.7). In the light of political misconduct and illegal activities disclosed throughout various countries in recent years it would be a mistake to assume that the rising generation of citizens have been receiving an adequate education during the past few decades (Etzioni-Halvey, 1990; Preston, 1990). On the contrary, there has been public criticism of schools for their trivialisation of citizenship learnings and their role in educating participants for passive citizenship. It has been said of at least one education authority that:

- citizenship learnings tend to be descriptive and functional, often trivial, usually bookish and removed from everyday experience; and
- citizenship learnings tend to be passive and deductive exercises, confined to the classroom and school environment, with limited application to community life and limited emphasis on the development of skills for active and informed participation (cited in Aulich, 1989, p.28).

In this context it is important to consider further the role of education programmes in responding to these problems and possibilities. However, citizenship as an issue for study has not been widely incorporated into education programmes (Aulich, 1991). Among the few such courses, there are those which are oriented towards overcoming participants' indifference and boredom with parliamentary and electoral matters by endeavouring to provide

participants with knowledge of the voting systems of various levels of government and the use of probability theory in assessing the results of opinion polls. Ironically, time for teaching participants about democracy, the responsibilities of citizens, the election of parliamentarians and the workings of government, is seen as competing with their learning from the struggles by active citizens associated with such socially significant issues as the rights of consumers, the colonised, and the aged. By and large the concern of this approach is to emphasise the importance of the rising generation of citizens learning about the nature and functions of the state; it is much less concerned with collaborative advocacy or community action by active citizens.

Given these recent developments, it is clear that active citizenship is no longer perceived as merely a kind of irrational behaviour. The question which now arises is: 'How to study active citizenship?' There is a need for a range of possible ways for reworking education for active citizenship. For instance, Fien (1990) has argued for a socially critical orientation to educating for active citizenship which promotes a critical analysis of the patterning of power relations in existing socio-economic arrangements, discloses contradictions between their rhetoric and practice, and challenges them to bridge the gap.

It is possible to study active citizenship via the community action of social movements (see for example Singh, 1992; Wood, 1985). Social movements arise out of the community action of citizens and are directed to express the aspirations, interests, values and norms of such social collectivities. Active citizens include environmental protectors, women working for equality, civil rights workers, anti-war and disarmament campaigners, and community self-help groups. The idea of active citizens sees people not only as reacting to situations but also actually producing them. A social movement consists of active citizens opposed to the existing relations of domination and conflict in society, who share similar cultural, economic and social orientations and are in contention for the management of these resources and activities. The women's movement, for example, consists of active citizens who have developed a social critique of the existing socio-economic order and its relations of patriarchal domination, who share the same cultural orientation towards social justice, and who are using their social competencies to gain control over the management of socially, culturally and economically significant activities. At stake in the work of active citizens is a set of resources and models that they seek to manage and control.

Introducing Barbalet's (1988) concepts of social movement and community action to a discussion of global education raises a number of interesting issues. As a means of socio-economic and cultural change the community actions of social movements redefine what is meant by citizen participation. Community action initiatives are composed of legally and socially constituted citizens working collectively rather than individually. They are linked in community action through a shared self-consciousness of purpose. Thus, although citizenship is vested in individuals, it is used to create groups, associations and social movements of many kinds.

To paraphrase Barbalet (1988), there is a two-way relationship between citizens and social movements, in so far as the community actions of social movements facilitate the development of citizenship, while the rights of citizenship, once secured, nurture the development of social movements. The conditions for citizen participation in community actions requires that they draw upon a range of material and social resources, including norms and rights. In the absence of the rights of citizenship the conditions for producing community action are likely to be constrained. However, the suppression or repression of community action by citizens does not necessarily mean that change is impossible. Paradoxically, community action both contributes to and is facilitated by citizenship. Where such civil rights are absent, community action can be a source of power and knowledge in providing for successful change. What is not available as a right may be achieved through community action.

The participation of informed and active citizens in community action is not only a consequence of socio-economic situations but also a creator of them as well. Through community action, citizens work as agents of socio-economic change, rather than being merely its product. Of course, the outcome of a mobilised pressure for inclusion of new citizens or new citizen rights cannot be guaranteed or predicted. Further, it is necessary to avoid the conclusion that once civil rights are achieved other types of citizenship rights simply take time to emerge. As Barbalet (1988) argues, community action is most crucial for the expansion of citizenship and the deepening of democracy; this is especially so when opposition to such initiatives is highest. One characteristic feature of citizen participation in community action is its capacity to mobilise resources. Consider for a moment the community action sponsored by the Civil Rights movement. It mobilised resources for social change, secured the location of indigenous people in some sections of national institutional power struc-

tures, redefined notions of ethnicity, and is producing a reappraisal of national institutions.

Barbalet's (1988) approach to citizen participation in community action rejects the view that such forms of collective behaviour are primarily oriented to the resource mobilisation. A quite different understanding of the relationship between citizenship and community action needs to be explored. It needs to be understood that citizenship participation in community action is an important basis of cultural transformation in society. Such community action is oriented towards questioning the taken-for-granted definitions, roles, and functioning of the socio-political arena. From this perspective community action is the source for changing existing cultural, economic and social patterns. It is in this sense the community action undertaken by organisations such as Amnesty International provides an excellent illustration of informed and active citizenship, which is not only challenging 'First World' relations with the 'Third World' but is seeking to establish an entirely new conception of what this relationship should be.

READING 2

ETHICAL GUIDE TO RESPONSIBLE TRAVEL

If you are travelling to the 'Third World,', you will benefit from understanding the forces that enable, or prevent, people from achieving a reasonable quality of life. The cost of mass tourism can be reduced markedly by responsible travel by informed and active citizens. How can we understand more about the opportunities and constraints that 'Third World' people face? In this lecture we consider some of the many practical and personal travel suggestions to assist tourists to increase the positive impact of their travel activities.

What are the Benefits and Costs of Tourism?

From its humble origins tourism has grown into the world's largest industry, turning over an astonishing US $2 trillion in 1987 and employing one out of every sixteen workers, worldwide. Tourism brings in foreign exchange, creates jobs, and improves airports, roads and communication facilities. Tourism can help preserve the world's ancient heritage and natural environment such as the pyramids of Egypt, Europe's historic buildings, and Australia's Great Barrier Reef. It is expected that some controls over the number of people visiting these sights will have to be implemented in the near future. On a personal level there are many potential benefits for tourists, for example:

- to escape from the stresses of their everyday lives, to relax and be happy;
- to meet new people and make new friends;
- to learn about other cultures and increase international understanding; and,
- to experience personal challenges.

Tourism, however, while bringing much of benefit, also has its downside. The costs of developing tourist resorts and infrastructure are considerable, and frequently the drain of money out of a host country can leave as little as 20% of tourist expenditure remaining. There are also other associated costs.

Tourism Can Damage the Physical Environment

Tourism can damage the natural and built environment (Innskeep, 1991). Some of the world's beaches have been severely affected by high-rise apartments and hotels, necessitating the carting of sand to replenish that lost to the tides. Parks and river systems have been polluted and almost ruined by the sheer volume of visitors. Caves and sacred sites have been so damaged that screens have had to be installed to protect what is left. Beautiful natural beaches, coral reefs and mountains are being destroyed. Mine owners gouge the hills to sell soil for hotel construction. Hotels dump sewage into the sea. In some places drinking water now has to be brought in by truck for all, or part of the year. Significant damage is being done as a consequence of trekking and climbing. The non-biodegradable items which tourists bring often end up thrown into rivers, or can be found strewn around the edges of villages. We need to think and talk about the things that we can do about this.

Tourism Can Have a Major Impact on Indigenous People

There are two main and opposing schools of thought, regarding the impact of tourism on indigenous people (Richter, 1989). One suggests that the culture of such people will be strengthened through the reproduction of 'genuine', rather than 'commercial' culture for the tourist industry. The other argues that contact with tourists will weaken, if not destroy, indigenous cultures, unless precautions are taken. Here, it must be emphasised that the aim is not to preserve people's 'cultures' as museum pieces. It is well-recognised that all cultures constantly undergo a process of change. Indigenous people want tourists to have contact with their culture on their terms, including control over sources of information, respect for privacy and the development of activities catering to the interests of tourists. They have, for example, responded to the negative aspects of tourism, and especially the issue of invasive photography, by closing off their community to outsiders. The taking of photographs is regarded as one of the worst social aspects of tourism. Tourism is having a mixed impact and it is encouraging to see that efforts are being made to control some of the problems. In some instances, for example, difficulties with damage to, and a lack of respect for, sacred sites and the environment have been corrected.

The impact of tourism in some places has been on the ethnic minority people who have been displaced from

their land to the hills where they now eke out a meagre life farming and selling woven baskets. The cost for them has been very high. Their young no longer have a decent environment in which to grow up. Tourists have brought naked bathing, drunkenness, drug taking and a hunger to satisfy their sexual urges to the area. Pimps, prostitutes, drug dealers and gamblers have followed them. Maintaining one's culture in the face of the avalanche of tourism is extremely difficult, and even the strongest culture becomes considerably diluted over the years. Traditional dances which were once only performed at important ceremonies, are now performed regularly at tourist gatherings, for cash. This has led to a decline in the meaning, spiritual relevance and dignity of these dances. Handcrafts have also declined in quality due to mass tourist demands for small, cheap souvenirs. Women, influenced by tourist fashions, no longer wear local dress which is far more appropriate for the tropics. Sometimes the results cause local people to become angry and resentful - a very different response to the initial hospitality and friendship they may have given visitors. We need to think and talk about the things that we can do about this.

Sex Tourism Has a Major Impact on Women and Children

Sex tourism has a major impact on women and children (Truong, 1990). The link between tourism and prostitution is apparent in the commercialisation and commodification of human relationships. Women and children are the main victims of this growth industry. The relationship between tourists and prostitutes is almost always unequal. The tourists' wealth brings power and advantage, which usually results in a relationship that is highly exploitative of the other person, who is usually extremely poor and powerless. An estimated 60% of the 2 million tourists who visited Thailand in 1982 were participating in sex tourism. There are an increasing number of children, of both sexes, becoming prostitutes in the 'Third World'. They are lured by pimps into brothels and often become addicted to drugs. Some are homeless street kids, some come from poor rural families, and some drift into it from their 'exciting' contact with tourists, from overdeveloped countries. These children usually have no education or trade, and can readily become beggars. Imagine a child prostitute, deteriorating physically and mentally due to drug addiction and the effects of being a prostitute. We need to think and talk about the things that we can do about this.

READING 3

COMMUNITY ACTION FOR RESPONSIBLE TRAVEL

Tourism is now the world's largest industry. Bringing great benefits to many countries - investment, foreign exchange, new jobs and wealth are all products of tourism. But tourism has a dark side too. It can bring labour exploitation, destruction of the environment and cultural insensitivity causing great hardship, especially in poorer countries. Tourism often causes cultural and environmental destruction.

What can be done to tackle these issues, and to promote responsible travel? After all there is no point in funding overseas aid projects if tourism undermines these projects and contributes to world poverty. Individual citizens can help in at least two ways.

1. Personal Travel

Simply by travelling with companies that have been established to promote responsible travel individual citizens can show that they are someone who cares. These companies usually have a range of specialist tours which focus on meeting people from other cultures and worlds. This is a most exciting way to travel. It offers a way of bringing our strife-torn and poverty-ridden world together by knowing and understanding each other. These highly successful study tours go beyond the ordinary tourist track - right into the heart of 'developing' countries. Travellers may meet the Lambadas from India, or the indigenous people of the Philippines, or the Hill People of Northern Thailand. They share bush tucker with the Aborigines in the Northern Territory, or 'killer' beef in the remote Kimberley. Such tours provide a moving human experience with people from other cultures.

Responsible travel has been developed to tackle the problems caused by tourism by promoting ethical travel. Usually these non-profit travel agencies offer all the services that travellers expect: experienced professional advice, extremely competitive prices and package deals to suit individual and group needs. Most importantly, however, all the money earned by such companies goes towards development work in the 'Third World'. Such travel offers a range of tours that go off the beaten track, and focuses on meeting people from other cultures in an atmosphere of respect and understanding. Travel opportunities include:

- visits to village development projects;
- study tours focussing on efforts to counter injustice, inequality and environmental degradation; as well as
- offering relaxation, sight-seeing and the experience of another culture with local people as your hosts.

2. Community Action

The foreign debt problem that most 'Third World' countries face is one of the main causes of children being forced into prostitution and slavery. The tourism industry is a part of national policy in these countries as a result of loan conditions imposed by the International Monetary Fund (IMF) and the World Bank. This policy would be satisfactory if tourism promoters did not emphasise sex tourism. The Task Force to End Child Sexploitation in Thailand recently held a rally outside the officers of one British airline company in Bangkok to protest advertising material showing a semi-naked young girl, and describing the experiences of a male traveller with a prostitute in Thailand. Likewise, in the Philippines, Gabriela, the national coalition of women's organisations, has been working to promote the rights and welfare of children subject to sexual abuse. Global citizens must also consider ways of stopping 'First World' men from sexually exploiting women and children in 'Third World' countries.

Individual citizens can help by becoming informed and active participants in community action projects and conferences highlighting the nature of sex tourism. In particular, there is a need for citizens to look at their society and establish what it is that makes their men want to visit 'Third World' countries to subject women and children to sexual exploitation. The age, race and gender of men visiting 'Third World' countries have enormous power in relation to the children they sexually abuse. It has been proposed that people who travel overseas to have sex with children could and should be prosecuted under their own nation's laws. There are no legal obstacles or constitutional prohibitions on doing so. Governments have the authority to make criminal laws to prosecute crimes committed by its citizens outside their country. Moreover, such an initiative would signal to 'Third World' countries that 'First World' countries are committed to combating sex tourism.

READINGS

Conclusion

Tourism is a major growth industry which is here to stay. It affects all of us, at home and abroad. However, tourism brings both benefits and costs to the host community. As we have seen, the benefits include:

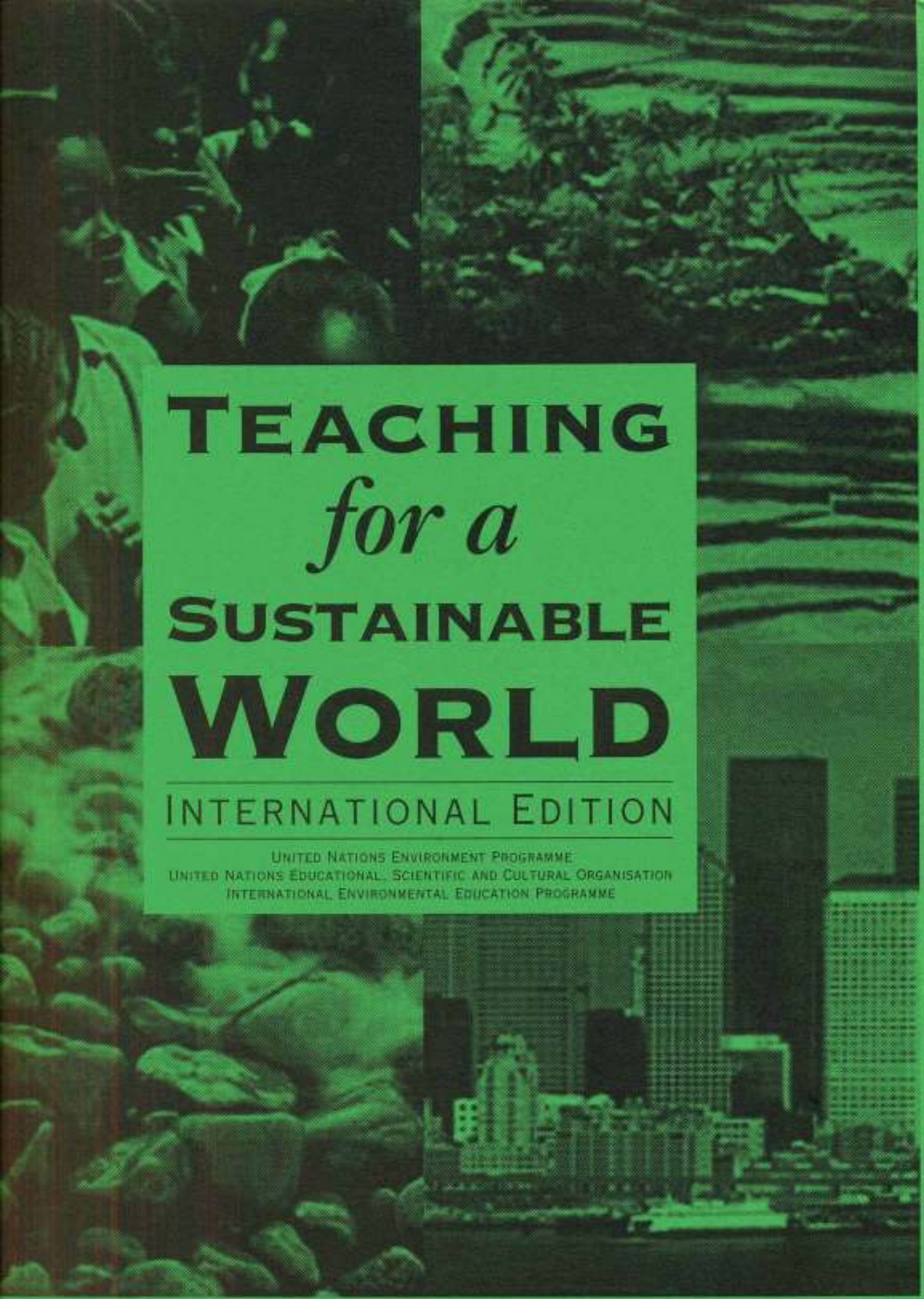
- the creation of jobs;
- the generation of foreign exchange;
- the development of new facilities;
- the preservation of cultural and natural heritage; and, on a personal level,
- tourists have the opportunity to relax, experience and understand a different culture and enhance their lives.

However, there are many costs, especially to the peoples of the 'Third World'. These include:

- the siphoning of money out of their economies to promote tourist development and import 'home comforts' for tourists;
- the pollution of their environment;
- the commercialisation and undermining of their cultures; and
- the prostitution of women and children through sex tourism.

Tourists have a lot of power and there are many things that they can do to reduce the undesirable aspects of tourism. Some of the main points to remember are:

- learn as much as possible about the culture and language of the country, or people, that you are going to visit;
- allow yourself time to rest and relax, and then look at the people you are visiting with respect and sensitivity;
- if circumstances permit, contact with a local person can enable you to see and understand much more than you can by yourself;
- be aware of your relations with the local people, especially women and children - avoid sexual relationships that are not based on equality;
- acknowledge that your visit can have an impact on the local environment and try to minimise this; and
- call for, and support your government legislation to punish those from your country engaged in the sexual abuse of children through sex tourism.



MODULE 14

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP

AusAID

COMMUNITY *based* ENVIRONMENTAL EDUCATION

EDWARD ERRINGTON
UNIVERSITY OF OTAGO
NEW ZEALAND

IAN ROBOTTOM
DEAKIN UNIVERSITY
AUSTRALIA

INTRODUCTION

It is generally agreed that the most important and challenging kind of environmental education is 'education *for* the environment' in which teachers and students engage in critical studies of environmental issues in their own locality. This kind of environmental education entails critique of the assumptions and values underlying alternative and often opposing proposals for action in respect of environmental issues. There are a number of requisite conditions to 'education *for* the environment', for example:

- a capacity to engage in studies outside the classroom;
- a willingness to base a curriculum on the investigation of a probably controversial environmental issue;
- a recognition that the local community is the appropriate source of environmental issues upon which to base a curriculum;
- a preparedness to adopt a politicised view of environmental problem solving and curriculum work;
- a recognition of the need for creating the conditions for students to critically appraise the assumptions and values underlying environmental action proposals;
- a willingness to consider the role that curriculum can play in social change aimed at environmental improvement.

This workshop illustrates an instance of community-based education *for* the environment, explores some of the different meanings embedded in material designed with education *for* the environment in mind, and invites participants to consider some of the practical and theoretical implications of adopting this approach to environmental education in their own educational settings.

OUTCOMES

It is expected that participants in this workshop will:

- identify a number of local environmental issues;
- observe a pictorial account of an actual instance of 'education *for* the environment';

- engage in a critical analysis of this account — by deconstructing its meanings and reconstructing alternative meanings for the same pictorial account;
- gain an appreciation of the way in which media depictions of environmental and environmental education events are in fact reconstructions for public consumption;
- connect these understandings with their own educational experiences; and
- invoke these experiences and understandings in working towards an improved set of principles qualifying 'education *for* the environment'.

WORKSHOP OUTLINE

The workshop will involve participants in small groups in constructing a number of alternative interpretive accounts of an instance of 'education *for* the environment' depicted in a series of photographs. These constructed accounts will be compared with an 'original' commentary with a view to illustrating how easy it is to adopt a non-politicised view of environmental education.

The workshop will also take a look at some of the literature on critical community-based environmental education, and work towards an improved set of principles qualifying 'education *for* the environment'.

MATERIALS REQUIRED

Overhead Transparency Masters

OHT 1: Three Approaches to Environmental Education

OHT 2: Workshop Objectives

OHT 3: Education *for* the Environment

OHT 4: Professional Development in Environmental Education

Resources

Resource 1: The Environmental Education and Computer Conference Project: Two Case Studies

Reading

Reading 1: Five Principles for Professional Development in Environmental Education.

ADDITIONAL READING

Boal, A. (1979) *Theatre of the Oppressed* (trans. C. A. and M. O. A. McBride), Urizen Books, New York.

Robottom, I. and Muhlebach, R. (1989) Expanding the Scientific Community in Schools: A Computer Conference in Science Education, *Australian Science Teachers Journal* , 35 (1), 39-47.

Schreuder, D. (1994) The Schools Water Project (SWAP): A Case Study of an Action Research and Community Problem Solving Approach to Environmental Education, *Australian Journal of Environmental Education*, 10, 35-46.

Wagner, G. (1979) *Dorothy Heathcote: Drama as a Learning Medium*. Hutchison, London.

1. Introduction: Environmental Gripes Auction

In this warm-up activity, environmental concerns are 'auctioned' to identify the environmental concerns most worrying the participants.

- Distribute (or ask each participant to provide) a slip of paper 5cm square.
- Ask participants to write down a one- or two-word statement identifying a particular environmental issue that they are aware of, or concerned or amazed about.
- Collect the 'gripes' and read each one out, in turn, as one by one, they are put up for auction.
- Auction instructions: Each person has 100 points to spend and cannot bid over this. A record should be kept of the number of points each gripe is sold for. When the auction is over, the people who have purchased cards explain why their particular 'gripe' is important, and how it is likely to affect their lives and those of others.
- Discussion may be held about why the gripe attracting the greatest number of points is of such high interest and concern to the group.

2. Education *for* the Environment

- Use OHT 1 to differentiate the three kinds of environmental education: 'education *about* the environment', 'education *in* the environment', and 'education *for* the environment'.
- Invite discussion about the meanings embedded in this trichotomy.
- Use OHT 2 to outline the objectives of the workshop.
- Use OHT 3 to outline the characteristics of 'education *for the* environment'.

3. The Case Studies

- Explain the context of the environmental education work in the three points in the introduction to the two case studies (Resource 1). Ask participants to read the case studies, noting the images contained in the photographs.
- Ask participants to work in small groups to analyse the case studies using the characteristics of education *for* the environment on OHT 3.
- Introduce to the group the next task of *deconstructing the case study presentation* by pointing out the role of:
  - the image of each individual photograph;
  - the sequence of images in the case study; and
  - the commentary in presenting a 'story' of a particular kind — in reconstructing the actual events for public consumption.
- Invite discussion among the group about such questions as what messages are included in the presentation as given, and what alternative messages are *not* included. For example, what additional or substitute commentaries could be allocated to each slide, and what differences in order of presentation of the slides would be possible? What impact do these alternatives have for the meaning of the overall presentation?

4. Responding to the Case Studies through Drama

Educational drama is one way of responding to analytical questions such as these in a concrete and practical way. Educational drama may provide a useful way of transcending cultural barriers in environmental education. The drama methods selected for this workshop have been used successfully in South America, Europe and China (see Boal 1979; Wagner 1979).

Participants work in groups of 5-6 and require their copies of the case studies in Resource 1.

A. Create a 'Tableau' to Represent the Message in a Chosen Image

- Ask each group to examine the photographs in Resource 1 and to select an image that is capable of more than one interpretation.
- Label two members of each group A and B.
- Person A is given the task of organising other group members into a human 'tableau' (a human still photograph or human sculpture) to represent the message of the chosen image exactly as it is. Person A may well be a part of the tableau.
- Each group member should have an opportunity to work around and examine the human tableau. Then dissemble the tableau.
- Each group is to compose a new single written caption which captures the essence of its tableau.
- To debrief, ask members from each group to articulate the decisions made regarding the choice of image, the arrangement of the tableau and the caption.

B. Creating a 'Tableau' to Represent an Alternative Message of the Chosen Image

- Participants work in the same groups with the same image as chosen in Activity 4A.
- Person B is given the task of organising other group members into another human tableau to represent the chosen image as it might be - that is, to convey a message of a different kind. Person B then becomes part of this tableau.
- After each group member has had the opportunity to walk around and examine the human tableau, dissemble the tableau.
- Each group composes a new single written caption which captures the essence of this new sculpture.
- To debrief, ask members from each group to articulate the decisions made regarding the choice of slide, the arrangement of the tableau, and the caption.

C. Displaying and Analysing the Tableau

- Ask each group to quickly reconstruct its first and then its second tableau for all other groups to view.
- Invite each group to articulate differences between the first and second captions and their justifications.
- Invite discussion on the following questions:
  - What are your thoughts and feelings about the first and second representations?
  - What has been included in the first representation that has been excluded in the second representation (or vice versa) and why?

- Explain why you have depicted aspects of the representation (e.g. the teacher's role, students' role, the social context, perceptions of the environment, the use of materials) in these particular ways rather than in other ways.
- What is the relationship between these depictions and the context within which they occur - your own personal histories and experiences, your understanding of certain environmental issues, the social contexts of schools with which you are familiar?
- What do you think might be the implications of engaging in these kind of activities with students of your own?

5. EVALUATION

Participants have now had an opportunity for assessing the above activities in terms of their feasibility in educational settings.

We are proposing a self-evaluation in the form of an appraisal of the above experience in terms of the sense in which it is consistent with the principles of professional development in environmental education set out by Ian Robottom (1987) in Reading 1.

- Use Reading 1 and OHT 4 as the basis of a mini-lecture on the characteristics of effective professional development in environmental education.
- As a group, appraise the ideas embedded in the principles on OHT 4. How was each of these principles used in this workshop? Are they really feasible? Can you think of ways of improving these statements of principles?
- *Follow-up Activity*: Participants develop their own photographic record (slide collection) on an environmental issues of interest or concern to them. Using this material, repeat the above activity in basically the same critical way.

OHT's

OHT 1

Three Approaches to Environmental Education

Education *About* the Environment

- Provides understanding of how natural systems work
- Provides understanding of the impact of human activities upon them
- Develops environmental investigation and thinking skills

Education *In* the Environment

- Gives reality, relevance and practical experience to learning through direct contact with the environment
- Develops important skills for data collecting and field investigations
- Develops aesthetic appreciation
- Fosters environmental awareness and concern

Education *For* the Environment

- Builds on education *in* and *about* the environment
- Develops an informed concern and sense of responsibility for the environment
- Develops an environmental ethic
- Develops the motivation and skills to participate in environmental improvement
- Promotes a willingness and ability to adopt lifestyles compatible with the wise use of environmental resources

OHT'S

OHT 2

Workshop Objectives

- Identify a number of local environmental issues
- Observe a pictorial account of an actual instance of 'education *for* the environment'
- Engage in a critical analysis of this account by deconstructing its meanings and reconstructing alternative meanings for the same pictorial account
- Gain an appreciation of the way in which media depictions of environmental and environmental education events are in fact reconstructions for public consumption
- Connect these understandings with their own educational experiences
- Invoke these experiences and understandings in working towards an improved set of principles qualifying 'education *for* the environment'



OHT 3

For environmental education to be education *for* the environment, there needs to be:

- A capacity to engage in studies outside the classroom
- A willingness to base a curriculum on the investigation of a probably controversial environmental issue
- A recognition that the local community is the appropriate source of environmental issues upon which to base a curriculum
- A preparedness to adopt a politicised view of environmental problem solving and curriculum work
- A recognition of the need for creating the conditions for students to critically appraise the assumptions and values underlying environmental action proposals
- A willingness to consider the role that curriculum can play in social change aimed at environmental improvement

OHT 4

Professional development in environmental education should be:

1. Enquiry-based

2. Participatory and Practice-based

3. Critical

4. Community-based

5. Collaborative

RESOURCE 1

THE ENVIRONMENTAL EDUCATION AND COMPUTER CONFERENCE PROJECT: TWO CASE STUDIES

INTRODUCTION

The project illustrated here was coordinated by Deakin University, involved five coastal schools, and had three interactive characteristics:

(i) environmental education work involving monitoring of water quality;

(ii) a computer conference as a forum for participating schools to interact with each other, sharing opinions, inquiries and results with Australian and overseas schools engaged in similar water quality work; and

(iii) a participatory research approach on the part of the project coordinators, teachers and students.



The ENVIRONMENTAL EDUCATION and COMPUTER CONFERENCE project

1. Although this project originally involved schools along the 'west coast' of Victoria, similar experiences have been reported in other countries (eg. USA and South Africa). Each school enjoys proximity to a magnificent marine setting, but their environmental education activities were initially concerned with freshwater quality. This case study reports on the activities of three of the five schools.



2. Case Study 1
One school identified three sites along a local river for their studies of water quality. The school borders a river with a history of pollution problems. This is a photograph of one of the study sites.

- Biochemical oxygen demand
- phosphates
- nitrates
- pH
- turbidity
- dissolved oxygen
- temperature change
- total solid
- fecal coliform

3. The school conducted tests of nine different parameters of water quality.



4. Students in different year levels were involved in the sample and analysis of the water. Here, some Year 10 students receive preliminary instructions from their teacher prior to beginning sampling and testing.



5. One of the interesting features of this project was that different teachers found different 'homes' for the environmental education work in their curriculum - for example, general science, technology studies, computing, etc.



6. Older students were able to work more independently on their collection of water samples. This student is collecting invertebrate fauna for additional study. Students from the school keyed their data into an international computer conference that was housed at the University of Michigan under the coordination of Professor Bill Stapp.



7. The international computer conference allowed each participating school to 'talk' with any of the 100 or so other participating schools. The benefits of such interaction were that students at any school could compare their data on any parameter with those from schools in other locations.

Mar 09/88 07:31

91:4) Randy Raymond - Great response Mark!!! Welcome to the conference Lorne, I am teacher of Science at Detroit Country Day School and I was in the first exciting to see how the students' attitudes change as well. I am very interested in learning more about the water supply of your area. What types of activities take place on the reservoir created for the water supply...

8. This is similar comparative data for the parameter of total solids. Other uses that students put the computer conference to included the exchange of geographical context information, exploration of alternative methods for data collection and analysis, establishment of new networks, as well as simply making new 'electronic pen friends'

		Q-value
diss O_2:	112% sat. 11mg/L	98
fecal coliform	100 colonies/100mL	45
pH:	6.5	75
B.O.D.	10 ppm	33
temperature	-0.5 °C change	92
tot phosphorus	1.1 mg/L	39
nitrates	0.55mg/L	98
turbidity	1m	33
total solids	770mg/L	20
Overall Water Quality Index		**62.7**

9. On the basis of computations involving all nine water quality parameters, students were able to come up with a single overall comparative index of water quality for their particular sample sites, and to place that index in an international context.



10. Overall, however, the proportion of total project time spent on the computer conference was disappointingly low - lower than the teachers expected. There were a number of technical problems associated with establishing and maintaining the computer link with overseas schools; and in a sense the more conventional approach of using the library rather than the computer conference as a resource remained dominant.



11. Case Study 2

Another school, at a holiday resort town, was interested in examining the water quality of the town's domestic water supply. At the beginning of the previous Summer holidays, the townsfolk had been advised by the local water board to boil their drinking water. This implied warning came with no explanation.



12. After doing some early analysis of tap water throughout the town, the teacher and students decided to sample some of the water at its source - the town's reservoir. Here the teacher is briefing the students at the reservoir about what they are required to do.



13. On the day they arrived at the reservoir, a team from the local water board was also present, collecting water samples from a sampling station at the end of the pier.



14. The teacher and students began to walk out along the somewhat rickety pier to get to the sampling station. However, before they got much further than where they are in this photo they were ordered in a forceful and somewhat aggressive manner to remove themselves from the pier. Not wanting to be involved in a dangerous conflict, they wisely did so.



15. However, they were not easily deterred, and only two days later they revisited the reservoir with the intention of resuming their water sample collecting, hopefully without the intervention of the water board. However ..., the pier had been removed and burnt!



16. The significance of this was not lost on the students, who tended to perceive the demolition of the pier as an attempt by the apparently defensive water board to prevent ready access by the students to the sampling point. The political character of environmental education was emerging in concrete terms for these students.



17. The students' determination to continue their study into this increasingly suspicious situation was not reduced, and they turned to collecting water samples from the more difficult locations of the water's edge ...



18. The reservoir spillway. It should be pointed out that the perception that the water board had destroyed the pier in order to prevent student access to the sample point was only surmise. The water board may well have acted with the morally loftier motive of concern for safety, - the pier was, as stated earlier, quite rickety.



19. Once obtained, the water samples were analysed either in the field or, as shown here, in the school science laboratory.



20. Data arising from analysis of water quality were then keyed into the computer conference. The simple set up here was very workable: the computer was located in the teacher's preparation room adjoining the science lab, so the students could work away in a relatively quite and secure setting.



21. Usually within two days, a number of responses to Australian student's entries were received from America and Germany. In this way, the computer conference served as an alternative source of advice and support to the more conventional one (the classroom teacher and the library). The computer conference acted as a larger, international classroom, placing students in the isolated Australian schools in direct contact with students elsewhere in the world. Thus the computer conference acted to expand the 'student scientific community' available to students.

READING 1

FIVE PRINCIPLES FOR PROFESSIONAL DEVELOPMENT IN ENVIRONMENTAL EDUCATION

Source: Robottom, I. (1987) The Dual Challenge for Professional Development in Environmental Education, in *Environmental Education - Past, Present and Future. Proceedings of the Third National Environmental Education Seminar and Workshops*, Australian Government Publishing Service, Canberra, pp. 80-82.

1. **Professional development in environmental education should be enquiry based.**

   Professional development activities in environmental education should encourage participants at all levels to adopt a research stance to their own environmental education practices. Current practices in environmental education (teaching, curriculum development, inservice activities, teacher education activities, institutional organisation ...) should be regarded as problematic - as having the potential for improvement through participant research.

2. **Professional development in environmental education should be participatory and practice-based.**

   Environmental education practices are shaped (guided or constrained) by the theories of practitioners themselves, and by the theories of others built into the structures and relationships of the institutions within which practitioners work. Environmental education problems are matters concerning the practices of individuals and groups: they occur when there are gaps between what practitioners think they are doing and what they are actually doing (these are problems of 'false consciousness'); and they occur when there are gaps between what they want to do and what they are actually able to do in their particular setting (these are problems of 'institutional pressure'). In either case, it is essential that the practitioner be directly involved in addressing these problems, because what is to count as a 'solution' will only become clear through a process of working through the relationship of theory and practice. Professional development courses consisting solely in prior 'training in the disciplines' conducted outside the work contexts of practitioners are of limited help in resolving these practical problems. Approaches to professional development that impose a division of labour between 'practitioners' and 'researchers' should be abandoned.

3. **Professional development in environmental education should be critical.**

   Professional development in environmental education should entail a critique of the environmental and educational values and assumptions that inform existing environmental education policies, activities and organisational relationships. It is through processes of enlightenment about the values informing and justifying policies, activities and organisational relationships that change in these registers is made possible as practitioners come to an understanding of the field through their critical enquiries and develop their own theories about environment and education.

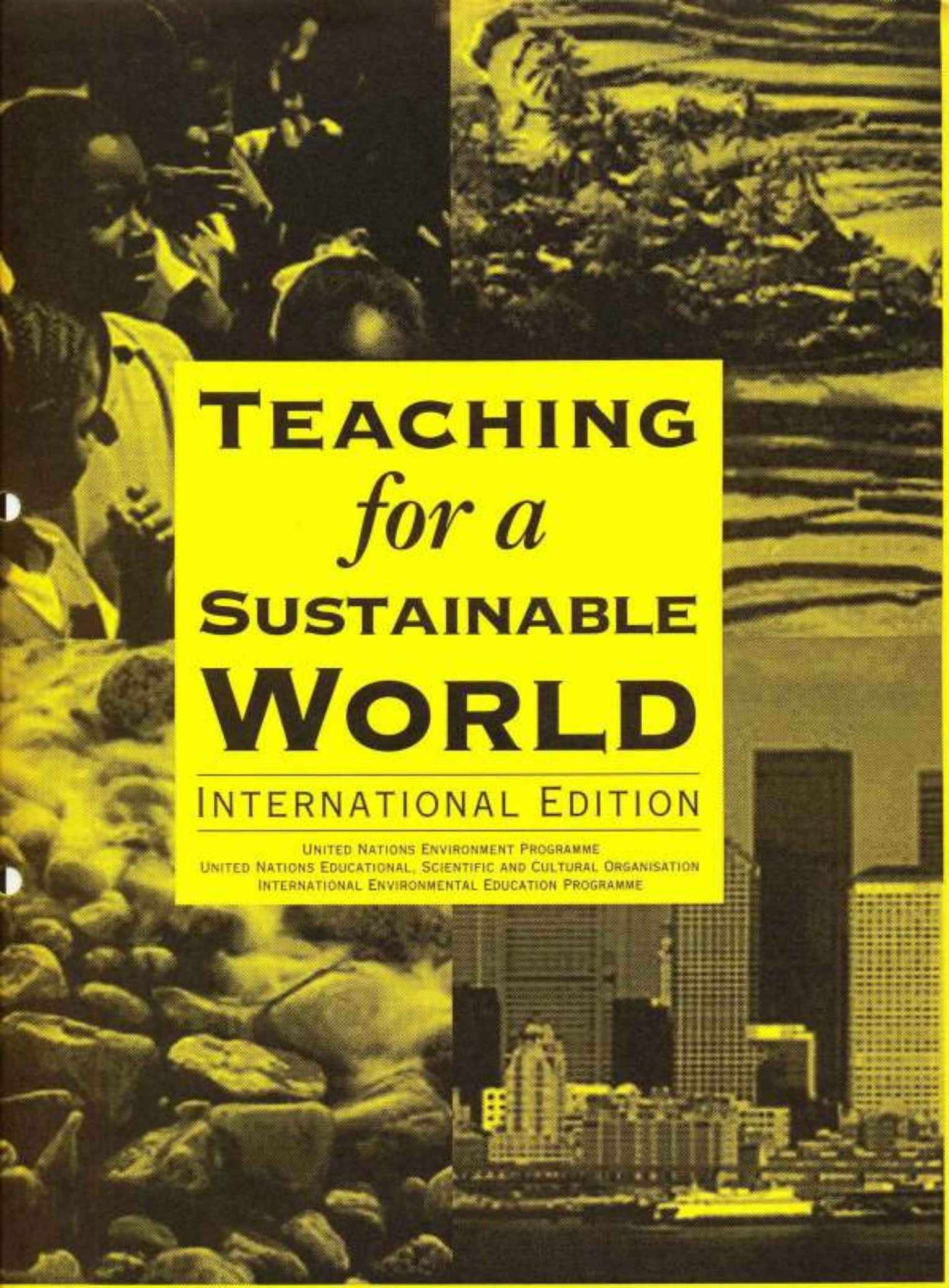
4. **Professional development in environmental education should be community-based.**

   Environmental education problems are doubly idiosyncratic: the *environmental* issues that form the substance of environmental education work are usually specific in terms of time and space (this is simply to say that environmental conditions in different parts of the world are different); and *educational* problems are rarely susceptible to universal solutions (this is to say that the ecology of classrooms differs from classroom to classroom).

5. **Professional development in environmental education should be collaborative.**

   There are two reasons for collaborative work in professional development in environmental education. Firstly, recognition of instances of false consciousness or institutional pressure often requires the assistance of colleagues working in similar circumstances (several heads are better than one). And secondly, many of the forces acting against improvement in environmental education are political in character, and collective action is usually more productive than individual efforts in the context of political struggles. (Examples of the political character of the forces shaping environmental education are: the tendency of schools (and governments) to favour a 'safe' form of environmental education like the teaching of basic ecological principles rather than the investigation of controversial local environmental issues; the tendency of textbook agents and educational consultants to favour the teaching of substantive content (information about the environment) rather than to encourage a critical, enquiry-based form of environmental education - because to do otherwise would be to threaten the relevance of their own expertise; the struggle for resources engaged in by interdisciplinary subject-based curriculum).

MODULE 15



TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

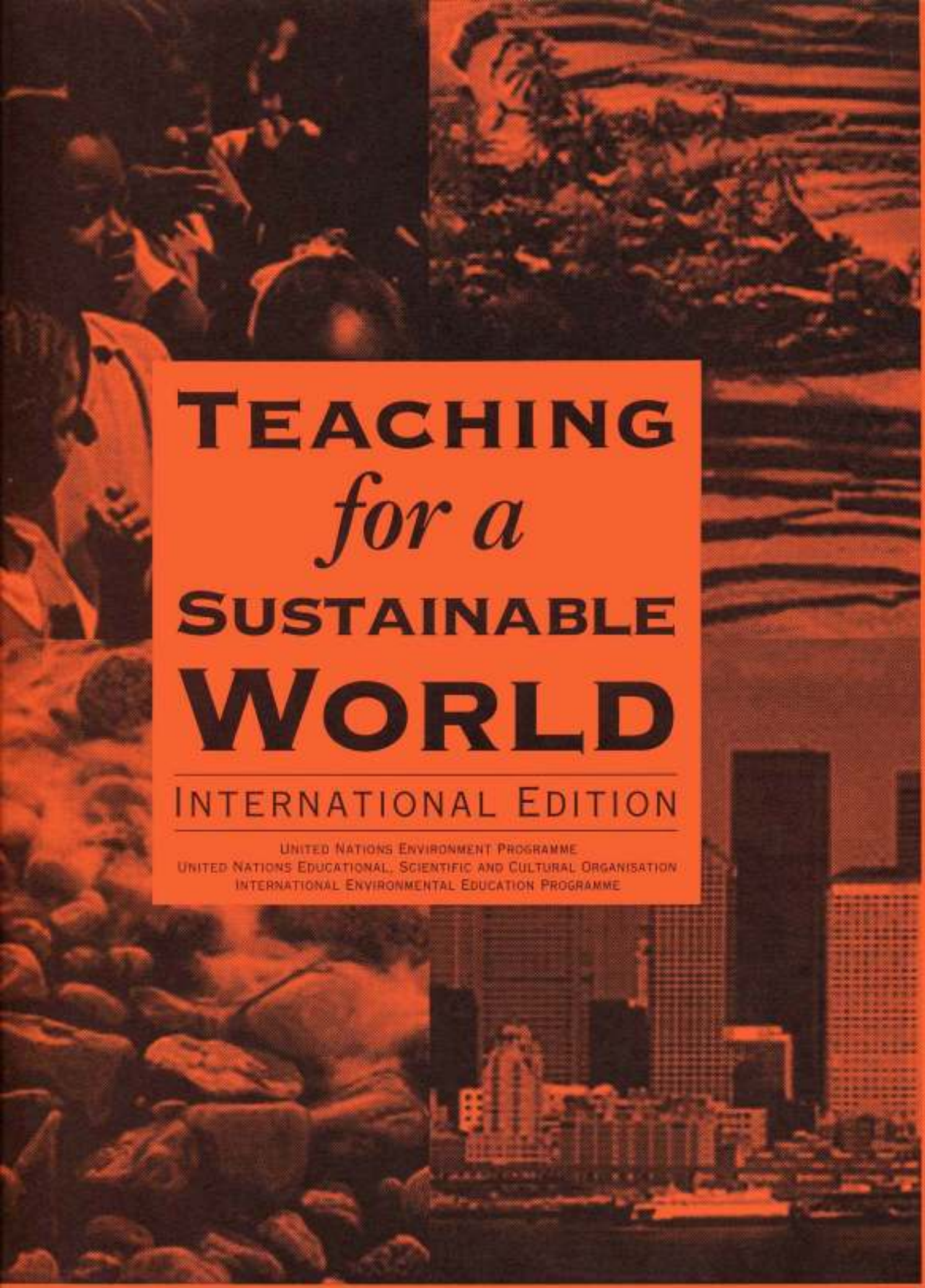
UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
UNITED NATIONS ENVIRONMENT PROGRAMME

AusAID
AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT

AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC.

GRIFFITH UNIVERSITY



MODULE 16

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID

CONSUMING *for* SUSTAINABILITY

BRIAN HOEPPER
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AUSTRALIA

INTRODUCTION

Consuming preoccupies most people in most parts of the world. The ways in which we consume have a profound impact on the well-being of people and of the planet. If we are to act to bring about a more sustainable future, all of us will need to think critically about our consuming practices, and act in ways that are more ecologically defensible.

This workshop acknowledges a substantial tradition of consumer education - one that has undergone important changes in emphases over past decades. Conventionally, consumer education has aimed to help people buy the 'best' product or service at the 'best' price. The major criteria have been quality of performance of the product or service, and price. Under the impact of a growing environmental consciousness, consumer education has undergone a 'greening'. Criteria related to environmental impact have been added to the conventional criteria of quality and price. However, both 'green consumerism' and 'green consumer education' can be seen as insufficient by those advocating a sustainable future.

In going beyond 'green consumer education', this workshop challenges participants to consider a more comprehensive and radical concept of sustainability - grounded in the interdependent values of peace, justice and environmental sustainability. This concept is labelled 'ecological', in the sense that it embodies a profound sense of the complex connectedness of social and natural phenomena. In this sense, a sustainable world is one in which all dimensions of connectedness flourish in peaceful, just and environmentally sound ways.

Such a concept takes consumer education well beyond the pursuit of 'the bargain', and beyond the aim of environmental conservation, to a curriculum aiming at the well-being of individuals, communities and the natural environment at all levels from the local to the global.

The process fundamental to this approach is critical thinking - a process that identifies hidden assumptions, evaluates alternatives and leads to ethical choice.

The workshop exemplifies an approach that could be applied to any form of consumption of product or service.

OUTCOMES

This workshop aims to raise for consideration an expanded and critical idea of sustainability, and to highlight ways in which people's practices as consumers could be guided by that idea of sustainability. The principles and procedures developed in the workshop could provide a framework for consumer education in the social education curriculum. In particular, the workshop aims to develop:

- an understanding of the limitations of 'green' consumerism;
- an understanding of a comprehensive concept of sustainability;
- ways in which that concept could be developed within a social education curriculum;
- proficiency in devising appropriate teaching/learning approaches reflecting a comprehensive concept of sustainability and a commitment to critical pedagogy; and
- a commitment to teaching for sustainability.

WORKSHOP OUTLINE

After a warm-up activity, there are seven related phases in this workshop:

1. Green Consumerism

Participants analyse some 'green advertisements'.

2. Ecological Consumerism

More advertisements are analysed to help participants appreciate the limits of green consumerism and understand the principles of ecological consumerism.

3. Being Critical

A mini-lecture which explores the basis of critical thinking in critical theory and the need for a critical pedagogy.

4. Critical Questions About Consumerism

Participants develop, and then review, a set a critical questions in order to develop an ecological analysis of consumerism.

5. The P-CAR

Participants use critical questions from the previous activity to conduct an ecological analysis of an advertisement for the P-CAR, and then draw a concept web to explore the broader implications of owning and driving a P-CAR.

6. Web for Another Product

Participants draw another concept web to analyse the social and environmental implications for a chosen product or service.

7. Review and Evaluation

The workshop concludes with a review of the value and practicality of approaching the issue of consumerism in the ways presented in the workshop.

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Is SUPERMARKET Really Green if ...?

OHT 2: Some 'Cons' in Green Consumerism.

OHT 3: Is it Really Sustainable if ..!

OHT 4: Principles of Ecological Consumerism

OHT 5: Critical Theory, Critical Thinking and Critical Pedagogy

OHT 6: Advertisement for the P-CAR

OHT 7: Questions for the P-CAR driver'!

OHT 8: P-CAR and Critical Perspectives (Uncompleted web)

OHT 9: P-CAR and Critical Perspectives (Completed web)

OHT 10: Proposed Activities

RESOURCES

Resource 1: Consumer Bingo

Resource 2: SUPERMARKET

Resource 3: Set of items for Activity 2:

A. Two Advertisements

B. Maratu Drivers are Criticised

C. Child Workers in India

D. The Journey of Tea Leaves

E. Anatomy of a Hamburger

Resource 4: An Ecological Analysis of Consumerism (blank proforma - Parts 1 and 2)

Resource 5: An Ecological Analysis of Consumerism (completed proforma - Parts 1 and 2)

Resource 6: Proposed Activities (Print copy of OHT 10)

READING

Reading 1: Green Consumerism: Some Contradictions

B) TO OBTAIN

Activity 4: Resources 4 and 5 are each provided on two A4 sheets (Parts 1 and 2). These two parts need to be pasted side by side on A3 sheets prior to photocopying.

Activity 5: Chart paper, felt pens

ADDITIONAL READINGS

The following readings may be used as background sources for preparing the mini-lecture on critical thinking, critical theory and critical pedagogy in Activity 3.

Bates, R. (1988) *Evaluating Schools: A Critical Approach*, Deakin University Press, Geelong.

Bigelow, W. (1990) Inside the Classroom: Social Vision and Critical Pedagogy, *Teachers College Record*, 91(3), 437-448.

Freire, P. (1972) *Pedagogy of the Oppressed*, Penguin, Harmondsworth.

Freire, P. (1974) *The Politics of Education: Culture, Power and Liberation*, Bergin and Garvey, South Hadley, Mass.

Freire, P. and Shor, I. (1987) *A Pedagogy for Liberation: Dialogues on Transforming Education*, Bergin and Garvey, South Hadley, Mass.

Gibson, R. (1986) *Critical Theory and Education*, Hodden Stoughton, London.

Giroux, H. A. (1981) *Ideology, Culture and the Process of Schooling*, Temple University Press, Philadelphia.

Giroux, H. A. (1983) *Critical Theory and Educational Practice*, Deakin University Press, Geelong.

Giroux, H. A. (1983) *Theory and Resistance in Education: A Pedagogy for the Opposition*, Bergin and Garvey, South Hadley, Mass.

Giroux, H (1988) *Schooling and Democracy: Critical Pedagogy in the Modern Age*, Routledge and Kegan Paul, London.

Giroux, H. and Purpel, D. (1982) *The Hidden Curriculum and Moral Education*, McCutcheon, Berkely.

Giroux, H. A. and McClaren, P. (1989) *Critical Pedagogy, the State and Cultural Struggle*, State University of New York Press, Albany.

Kemmis, S. (1988) *The Action Research Reader*, 3rd ed., Deakin University Press, Geelong.

Kemmis, S. et al. (1983) *Orientations to Curriculum and Transition: Towards the Socially-Critical School*, VISE, Melbourne.

Kemmis, S. and Carr, W. (1986) *Becoming Critical: Education, Knowledge and Action Research*, revised ed., The Falmer Press, Lewes.

Kemmis, S. and Stake, R. (1988) *Evaluating Curriculum*, Deakin University Press, Geelong.

Kretovics, J.R. (1985) Critical Literacy: Challenging the Assumptions of Mainstream Educational Theory, *Journal of Education*, 167(2), 50-62.

Livingstone, D.W. *et al.* (1987) *Cultural Pedagogy and Cultural Power*, Macmillan, New York.

Richardson, R. (1990) *Daring to be a Teacher*, Trentham Books, Stoke-on-Trent.

Shor, I. (1980) *Critical Teaching and Everyday Life*, South End Press, Boston.

Simon, R.I. (1983) But Who Will Let You Do It? Counter-Hegemonic Approaches to Work Education, *Journal of Education*, 165(3), 235-256.

Simon, R.I. (1987) Empowerment as a Pedagogy of Possibility, *Language Arts*, 64(4), 16-28.

Simon, R.I. (1988) For a Pedagogy of Possibility, *Critical Pedagogy Networker*, 1(1), 1-4.

Smyth, W.J. (1987) *A Rationale for Teachers' Critical Pedagogy: A Handbook*, Deakin University Press, Geelong.

1. Green Consumerism

Warm-up and focussing activity:

Begin with the activity in Resource 1 which focuses on people's consuming activities. The activity serves to promote interaction amongst participants. It should also touch on the problematic nature of consuming, and the complex challenges to consumer education.

- Refer to the phenomenon of 'green consumerism'. Ask participants what they think the term describes. Share some responses.
- Indicate that they are to see an example of a 'green consumerism' advertisement. Hand out the SUPERMARKET advertisement text (Resource 2). Ask participants to read the text and, individually, write a statement completing the sentence 'Is SUPERMARKET Really Green if ....?'
- Once participants complete the sentence, they could share sentences with neighbours. When most or all are finished, ask for some responses to be read to the group. Make a whiteboard list of 'objections' to the supermarket's claim to be environmentally responsible. Display OHT 1 to explore the question: 'Is SUPERMARKET Really Green if ...?'.
- Suggest that there have been many examples of such 'green' advertisements. Ask if participants can nominate any. Then display and discuss OHT 2 on 'Some Cons in Green Consumerism'.

2. Ecological Consumerism

Reading 1 on 'Green Consumerism: Some Contradictions' by John Huckle provides many concepts which can inform and enrich this section.

- Suggest that there is a difference between being 'green' and being 'sustainable'. In pursuit of this suggestion, hand out a number of items, one to each of a number of groups (Resources 3A-E).
- For each item, ask the group to complete a sentence, 'Is it really sustainable if ....?' in order to identify some criteria of sustainability. If this task appears to puzzle the participants at all, suggest that the term 'sustainable' might be expanded from meaning just 'materially capable of continuing' to meaning 'socially worthwhile and ethically desirable' as well.
- On completion, ask each group in turn to describe its item, and to read out its completed sentence(s). These sentences should refer to the factors of class, gender, human health, global injustice, etc.
- Display OHT 3 to explore 'Is it Really Sustainable if ...?'
- Display OHT 4 'Principles of Ecological Consumerism'. Ask for comments.

3. Being Critical

Use OHT 5 on critical thinking as the basis of a mini-lecture to link the factors 'uncovered' in the previous phase to the ideas of critical theory, critical thinking and critical pedagogy. Use the questions 'Whose interests are being served?' and 'What fundamental assumptions underpin this phenomena?' to provide a simple but valid reference point for these complex ideas. The Additional Readings provide valuable background on the nature of critical theory and critical pedagogy. Especially note Chapter 1 of Rex Gibson's 1986 book, *Critical Theory and Education*, as most valuable in this regard.

4. Critical Questions About Consumerism

- Hand out blank proforma 'An Ecological Analysis of Consumerism' (Resource 4).
- Ask each participant to select an intersecting point on the proforma (e.g. retailing - social justice) and to devise a generic question, useable in the classroom for that point. (e.g. Are all employees in the retailing operation paid fair wages?)
- When completed, ask some participants to share their questions with the group.
- Then hand out the completed proforma 'An Ecological Analysis of Consumerism' (Resource 5). Have participants compare the proforma's question with their question. Next have participants locate the proforma question applicable to the item they studied in Activity 2. Then they should carry on to skim read the whole proforma.

5. The P-CAR

- Display the advertisement for the P-CAR (OHT 6). Perhaps read it out aloud, with dramatic emphasis. Propose that the group explores the extent to which the advertisement, and the practices it represents, are sustainable.
- To this end, ask participants to locate some proforma questions (from Resource 5) which are applicable to the P-CAR situation. Then have a brief sharing of decisions made.
- Display OHT 7 of sample 'Questions for the P-CAR Driver'.
- Then introduce the idea of a concepts/issues web that locates P-CAR driving at the centre, and links to dimensions of peace, human rights, development and environment. Display the blank web (OHT 8).
- Have participants, singly or in groups, begin to fill out a similar web diagram on chart paper. Display the various results, comparing them and discussing the points that emerge. Then display OHT 9, and ask participants to compare it with their work.
- Ask participants, singly or in groups, to select one of the concepts/issues from the web, and propose an appropriate teaching/learning activity to develop that concept/issue with students. As participants report their proposal, write their suggestions on OHT 10. Participants will have already been given a print copy of that OHT (Resource 6). As reports are given, they too can write in the details.

6. Web for Another Product

- Ask participants, singly or in groups, to select another consumer focus, if possible one drawn from youth culture (e.g. fashion jeans; fast food; popular magazines; soft drink). Have them draw up a web for their choice, and also begin to propose possible teaching/learning activities. Continue this activity only as long as is compatible with leaving sufficient time for debriefing and evaluation.

Richard North's book, *The True Cost*, contains case studies of the social and environmental implications of over 30 goods and services ranging from jeans to hamburgers to computers and is a valuable resource for this activity.

7. Review and Evaluation

Review the workshop, focusing on the value and practicality of approaching the issue of consuming in the ways proposed in the workshop. Consider particularly whether such an approach might be too challenging for young people, themselves embedded deeply in consumerist materialism.

OHT'S

OHT 1

IS SUPERMARKET REALLY GREEN IF ...?

1. The energy required to chill and freeze foodstuffs is enormous, and necessitates burning of much coal or the use of nuclear power?

2. The transportation of the goods to the warehouse, and later distribution from there, uses so much energy, contributes to air pollution and causes road accidents?

3. Many of the foodstuffs could be provided in an unprocessed and unrefrigerated condition to consumers, with savings in energy use and pollution?

OHT 2

Some 'Cons' in Green Consumerism

1. Deliberate Lies

One US-based hamburger chain claimed that all its beef was 'US beef' thus countering charges about rainforest being cleared in Central and South America for beef cattle grazing. This claim apparently exploited a legal technicality, whereby beef imported into the USA and then processed can be classified as 'US beef'.

2. Ignorant Untruths

In 1989, in the UK, the Rover Car Company claimed in newspaper advertisements that this car was 'capable of running on unleaded petrol. This means that it's as ozone-friendly as it is economical'. When it was pointed out that lead causes brain damage, not ozone depletion, Rover admitted that they (or their advertising copy writers) were 'green with ignorance'.

3. Irrelevant Claims

Some washing up liquids have been labelled 'phosphate-free' in an attempt to woo customers, even though those products had never contained phosphates.

4. Partial Green Credentials

Manufacturers of disposable nappies have claimed that their products are environmentally-friendly because they have begun to use pulp made using a chlorine-free, dioxin-free process. This claim overlooked other factors: the chlorine-free, dioxin-free process, in toxicity tests, killed more fish, through the release of waste water from factories, than the other process. As well, the potential problems of enormous quantities of human faeces being buried in landfill dumps was overlooked.

OHT'S

OHT 3

Is It Really Sustainable If ...?

1. The retailing practice involves great danger to human life?

2. The product is advertised in a way that portrays men or women in unrealistic and challengeable stereotypes?

3. The product is made by exploited workers, including children, in other countries?

4. The production involves significant cruelty to animals?

OHT 4

PRINCIPLES OF ECOLOGICAL CONSUMERISM

1. Environmental Sustainability

This principle involves a belief that human impact on the non-human environment should be at the least level compatible with meeting reasonable human wants. Rather than an anthropocentric belief that people should exploit nature to the extent that we can 'get away with it', there would be a belief in maintaining the elements of the ecosystem as a 'good thing' intrinsically, and not just in terms of human benefit.

2. Individual Sustainability

a) Individual physical health/wellbeing

b) Individual mental wellbeing:

- the maintenance of mental peace, dignity and self-respect
- freedom from stress

c) Acknowledgement of the relationships between (a) and (b).

3. Social Sustainability

The maintenance of social cohesion, cooperation, a sense of community, social peace and justice at all scales from the local to the global.

OHT's

OHT 5

Critical Theory, Critical Thinking and Critical Pedagogy

CRITICAL THINKING involves these processes:

- identifying the most deeply-held assumptions within any situation
- evaluating those assumptions using criteria of peace, social justice and ecological sustainability
- imagining alternative assumptions, and consequently alternative ways in which situations might be organised.

In this sense, critical thinking has links with CRITICAL THEORY, which attempts to 'unmask' the interests that are served by the way social relations are structured and social life organised. The aim of critical theory is emancipatory. Through critical thinking people can recognise where their interests lie, and begin to act to effect social change in the direction of more just, peaceful and ecologically sustainable ways.

There is an analogy between psychiatry and critical social science. Just as psychiatry seeks through psychoanalysis to expose the deepest causes underlying personal psychosis, so critical social science seeks to expose the deepest causes of such social disfigurements as injustice, violence and ecological devastation. As psychiatry seeks personal emancipation, so critical social science seeks social emancipation.

CRITICAL PEDAGOGY promotes critical thinking amongst students. There are other characteristics usually associated with critical pedagogy, including making space for 'student voice' in negotiation of the curriculum and in the life of the classroom.

OHT 6

ADVERTISEMENT FOR THE P-CAR

This text is taken from an advertisement for a prestigious and powerful European sports car that is sold in many parts of the world.

Adrenalin

Imagine this. You're slipping along the highway in your Guards Red P-CAR. The sun is shining brightly, so the electric roof is down. Suddenly, you come upon a set of traffic lights. You stop precisely. Smoothly. Sitting behind the wheel of the family sedan beside you is a rival business associate. He's jaded. You're exhilarated. He's by himself. The road is deserted. You smile sideways and give a little throttle. The P-CAR purr becomes a growl. His knuckles turn white. The lights turn green. What happens next is up to you. Test drive the world's finest sports car today and discover the curative side of Adrenalin.

OHT 7

QUESTIONS FOR THE P-CAR DRIVER

Is your lifestyle really sustainable if ...

1. You live a highly stressed executive lifestyle?

2. You can be a winner only by putting other people down?

3. You define your persona by what you drive or wear or eat or own or live in?

4. You contribute more than the average to environmental degradation and pollution (in a country where per capita energy use is 60 times that of some poorer countries)?

5. You have career commitments that are detrimental to family life?

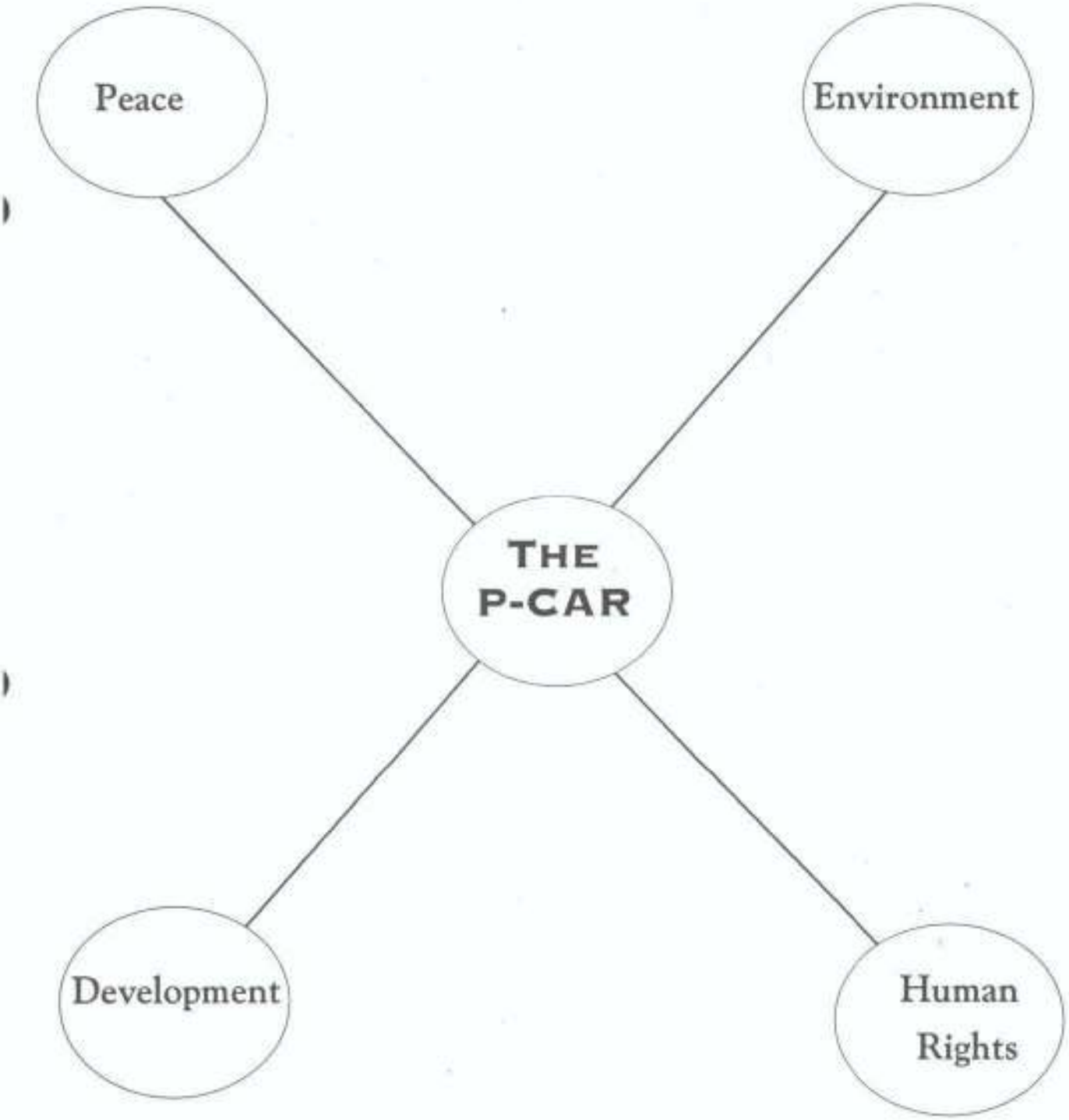
6. You live in constant fear of physical assault, theft, demotion, loss of status or vandalism to the P-CAR?

7. You wonder whether you are liked for what you are, or just for what you have?

8. You are the butt of envy, jealousy, antipathy, scorn?

OHT 8

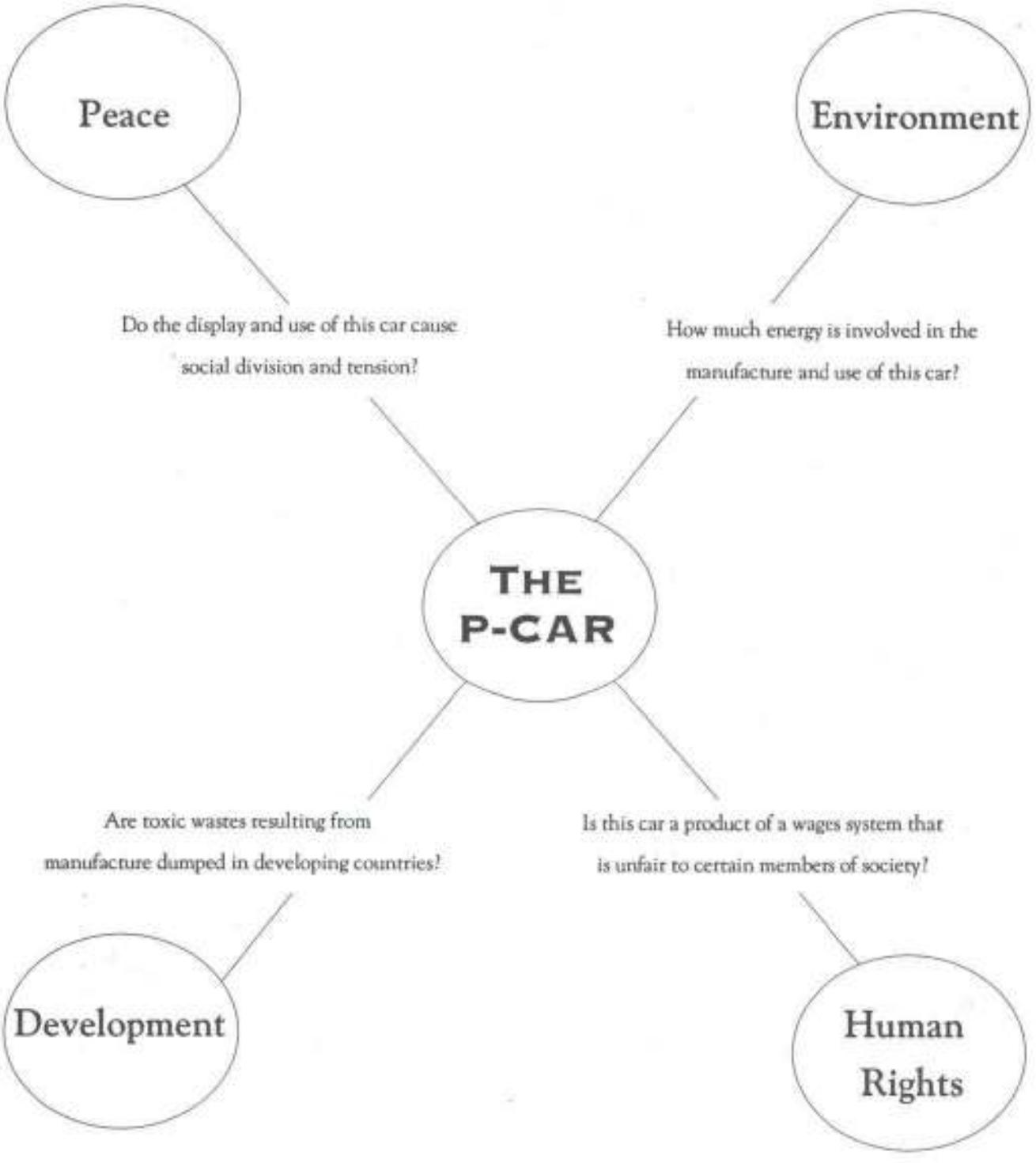
P-CAR AND CRITICAL PERSPECTIVES



OHT's

OHT 9

P-CAR AND CRITICAL PERSPECTIVES



OHT 10

Proposed Activities

Select one of the concepts or issues from the 'P-CAR and Critical Perspectives' web. Think about possible classroom activities for developing students' understanding of that concept or issue. In the appropriate space below, make some initial notes about that proposed activity.

Issue: _____

Possible Activity	Details of the Activity
1. Research	
2. Fieldwork (survey, interview, site study ...)	
3. Debate and Discussion	
4. Role Play	
5. Simulation	
6. Creative Writing	
7. Artistic Expression	
8. Other	

OHT'S

RESOURCE 1

CONSUMER BINGO

Move around in the group, meeting other people. Try to locate a person who fits one of the descriptions in the table below. When you do, talk briefly about the particular item. Make a brief note on your table, indicating the name of the person you've met and some details of the item. Then move on to another person, and repeat the process. If you're feeling competitive, try to complete four boxes in a row, in any direction. When you do, feel free to call out 'Con-bingo'!

Find someone who ...

A. Likes shopping Name: Details:	B. Owns a digital watch Name: Details:	C. Grows vegetables at home Name: Details:	D. Has bought duty-free goods Name: Details:
E. Looks for environmentally sound products Name: Details:	F. Buys at local craft markets Name: Details:	G. Has a compost heap or bin Name: Details:	H. Has computer games Name: Details:
I. Prefers to buy goods made in their own country Name: Details:	J. Takes their own carry bag(s) when shopping Name: Details:	K. Has shopped at a cooperatively owned shop Name: Details:	L. Likes eating with friends Name: Details:
M. Recycles bottles Name: Details:	N. Drinks imported tea or coffee each day Name: Details:	O. Likes second-hand clothes Name: Details:	P. Is wearing jeans Name: Details:

RESOURCE 2

SUPERMARKET

Source: Adapted from *The Times*, London, 23 September 1989.

This text is based on a newspaper advertisement placed by a major British supermarket chain in 1989. The advertisement featured graphics of the Arctic and Antarctic polar ice caps, with the text sandwiched between.

To prevent two pieces of ice melting, we've bought a new refrigerator

The fridge we're referring to is somewhat larger than your average domestic variety.

Located in Strathclyde in Scotland, our new refrigerated storage unit will sit on some 41 acres of land within a building of over half a million square feet which will swallow well over 300 000 tonnes of groceries. (Which, to put it in graphic terms, is about 250 fully laden jumbo jets.)

But perhaps what's even more impressive is the bit you can't see.

Heretically sealed into the pipework of our new refrigeration complex is an ammonia gas coolant, which, unlike CFCs, has absolutely no ill effect on the ozone layer. Nor will it contribute to the overall warming of the planet, known as the Greenhouse effect.

As you might expect, a fridge of this magnitude and complexity doesn't come cheap.

By the time it has been installed the whole project will have cost us a cool £27million.

But that's only the tip of the iceberg. We've been investing in the environment in this and other ways for nearly 20 years.

By the end of the year, four of our stores will be equipped with ozone-friendly cooling systems. These will be built from scratch and not bolted onto existing systems.

And there's more planned for next year and the year after that.

As a matter of fact, we don't intend to stop until each and every refrigeration unit in our supermarkets across the country is replaced.

The cost of such an exercise is staggering. But the consequences of doing nothing would be far more chilling.

RESOURCE 3A

TWO ADVERTISEMENTS

Source: Advertisements in *The Australian Women's Weekly*, 20 June 1979.

1. 'My husband says his handkerchiefs have never been so clean.'

What with working as a media rep. in her husband's business, and running a home as well, Shirley needs a thoroughly reliable washer. Married for 30 years, the SUPERMODEL is her third BRAND X. 'It gives me much more room in the laundry and takes a big load,' she smiled. 'I wash every three days and always use the suds save for socks, sheets and underclothes.'

As Shirley put it 'Who wants to waste water?' Even her husband runs a load through occasionally, and he'd never used an automatic washer before. 'He just read the instruction book once, and went ahead.'

2. 'I always use cold water in my MINIMODEL.'

Mrs Lydia K., originally from Samarkand, and now a resident of Sydney. Dog lover, and full time manageress in a catering company, Lydia still manages to run a home and look after her husband.

RESOURCE 3B

MATATU DRIVERS ARE CRITICISED

In Kenya, many people travel in Matatu public service vehicles. The Matatu is usually a Japanese-brand minibus. From the fares they receive, the Matatu drivers and conductors must pay the minibus owner a set fee. They can then keep any additional money they receive as fares from passengers. So the drivers and conductors are keen to attract passengers, and to cover as much distance as possible. Some drivers and conductors work from 05.00 am to 10.00 pm each day without a break. They often drive very fast and recklessly. They are often rude to passengers, overload the Matatus, and break the traffic laws. Some even take mild drugs. Many Matatu drivers have accidents, causing many deaths and injuries. Ask a Kenyan to name the most dangerous vehicle on the road, and they will name a Matatu.

RESOURCE 3C

CHILD WORKERS IN INDIA

Source: Voluntary Health Association of India, New Delhi.

The following table indicates the health problems associated with certain occupations in India. Approximately 44 million children in India are involved in full-time employment, many of them in the industries and occupations listed. The products of most of these industries find their way to consumers in the first world.

OCCUPATION	DISEASE/DISABILITY
Balloon Factories	Pneumonia, bronchopneumonia, breathlessness and even heart failure
Match Industry Fireworks Industry	Breathing problems, severe burns, muscle fatigue from lifting heavy loads, muscle wastage from long hours of working in one position.
Lock Industry	TB and upper respiratory tract diseases, acid burns, asthma, acute headaches, breathlessness.
Glass Industry	Silicosis and burns. Lifespan reduced by a third due to heat and dust.
Powerloom Industry	Fibrosis and byssinosis.
Slate Industry	Silicosis. Eventually the patient suffocates to death. Few slate workers live beyond the age of 40.
Domestic workers, shop boys, dhaba workers	Overwork, physical and sexual abuse, narcotics. Dependence often develops.
Carpet Industry	Poisoning from colouring agents, lung diseases from dust and fibre dust.

RESOURCE 3D

THE JOURNEY OF THE TEA LEAVES

Source: L. Waddell (1988) *Learning for a Fairer Future*, WDT Cooperative and NSWGTA, Sydney, p. 59.

This is the opening scene from an Australian play that deals with the tea industry in Sri Lanka, and tea drinkers in Australia:

NARRATOR (pouring a cup of tea from a tea pot): Have you had a cuppa today? Tea is one of Australia's most popular drinks and one of the cheapest too. Only three cents a cup, with milk (pours some milk). Have you ever wondered where our tea comes from? Do you know who grows it? Do you know how they get it to us? Today we are going on a long journey - the journey of a tea leaf. Our journey begins on the island of Sri Lanka where some of the world's best tea is grown. The journey ends here in Australia, when I drink this cup of tea (narrator takes a drink of tea). Now let's start our journey and meet Indrani the tea picker who lives and works on a tea estate in Sri Lanka.

INDRANI: Hello, my name is Indrani. I'm 17 years old and work on this government owned tea estate in Sri Lanka. I pluck only the new bud and top two leaves of the tea bush (picks next bush). I'm a skilled plucker so I can gather about 30-35 kilos of green leaf tea in a day. That will produce between 7 1/2 to 9 kilos of manufactured black tea. And for all this I get 24 rupees a day .... I'm paid on a daily rate according to how much I pick. Some days I'm turned away because there isn't enough work or when I'm too sick to work, then I'm not paid. I'm taking my full bag of tea down to be weighed and then I'm going home to prepare my evening meal.

RESOURCE 3E

ANATOMY OF A HAMBURGER

Source: *Modern Times*, April 1992, p. 12.

Jeremy Rivkin has written about the treatment of beef cattle in the USA:

After being fattened to their 'ideal' weight of 1000 pounds, mature steers are herded into trailers for the journey to the slaughterhouse - a journey that may involve travelling along the interstate highways for several days, during which time it is impossible to stop for rest or nourishment - sometimes not even for water. On the way animals fall and are trampled, breaking legs and pelvises. The injured animals are called 'downers'. On arriving, the animals are led to a holding pen; downers - lying spread-eagled on the floor, unable to stand, or chained together by their broken legs - must wait to be unloaded. The animals who have died en route also have a name. They are called the 'dead pile'.

RESOURCE 4 PART 1

AN ECOLOGICAL ANALYSIS OF CONSUMERISM

	Environmental Damage	Use of Resources	Use of Energy	Animal Welfare	Physical Wellbeing	Mental Wellbeing
Material Source						
Processing						
Transport						
Storage						
Advertising						
Retailing						
Consumption or Use						
Waste Disposal						

RESOURCE 4 PART 2

Convivial Community	Ownership of Enterprise	Social Justice	Global Justice	Principle of Necessity	Principle of Adequacy	Sense of Ecological Self

RESOURCE 5 PART 1

AN ECOLOGICAL ANALYSIS OF CONSUMERISM

	Environmental Damage	Use of Resources	Use of Energy	Animal Welfare	Physical Wellbeing	Mental Wellbeing
Material Source	• Does the production or extraction of the materials used damage the environment?	• Are non-renewable resources used as a material source, or in any of the stages of processing, transportation, storage, advertising or retailing of the product?	• Is there an unwarranted use of energy in the production of the material or in its processing?	• Are animal products involved? If so, are the animals treated well in the various stages of their purchase, holding and use? If animals are killed, is suffering minimised?		
Processing	• Does the processing, transportation or storage of the product pollute the environment?	• Is there any unnecessary wastage of resources at any stage of the process?		• Are animals used in testing the product? If so, how ethical is their treatment?	• Is there the danger of physical harm or ill health to people involved in the various stages of production?	• Do the various stages of production cause stress, anxiety or loss of self esteem to the workers involved, or to any other people affected?
Transport			• Is the product transported or stored in ways that use much energy?		• Is there a risk of physical danger in the transportation or storage of the product?	
Storage						
Advertising	• Is the product advertised in a way that damages the environment - for example by visual pollution?		• Does the advertising of the product use much energy?			• Is the product advertised in a way that might induce feelings of stress, anxiety or inadequacy in those exposed to the advertising?
Retailing	• Does the retailing process cause environmental damage?		• In the retailing of the product, is much energy required - for example, in controlling temperature of store or product, in travel by clients, in delivery of goods?		• Is the physical health of workers safeguarded during the retailing process?	• Are retail workers subject to stressful or demeaning conditions?
Consumption or Use	• Is the environment damaged by the actual use of the product?	• Does the use of the product necessitate the further use of other resources?	• Is the product one that requires much energy when it is used?	• Are animal habitats threatened by any stages in the process?	• Does the use of the product endanger the physical health of people?	• Does the use of the product cause an unnecessary level of stress?
Waste Disposal	• Does the product cause problems of waste disposal?	• What provision is there for recovery, reuse or recycling of resources from the process?	• Does the disposal of waste require much energy? • Can the materials be recycled without undue energy required?	• Are animal habitats threatened by the location or processes of waste disposal?	• Does the disposal of waste pose any threat to the physical health of people, either now or in generations to come?	• Can the process of waste disposal cause anxiety in people?

RESOURCES

RESOURCE 5 PART 2

Convivial Community	Ownership of Enterprise	Social Justice	Global Justice	Principle of Necessity	Principle of Adequacy	Sense of Ecological Self
• Are communities disrupted or displaced by the production of materials, or by the processing, transportation and storage of the product?	• Are the owners of the stages of production, processing, transportation, storage, advertising, retailing and waste disposal committed to ecological principles of * conservation * sustainability * equity * empowerment of members * community welfare * ethical practice? • Is the enterprise locally owned and controlled, and do profits benefit the local community? • Do the owners recognise the right of workers to organise for their collective benefit? • Do employees participate in decision making and profit sharing?	• Are just workplace relations associated with the production of the materials, the processing, transportation and storage of the product? • Are immigrant workers exploited at any stage of the process?	• Are the people and/ or the environments of certain nations exploited for the advantage of others by the ways in which the product is produced, transported, stored, advertised or sold? Do the profits of the enterprise stay in the country?	• To what extent is the product itself a necessity for meeting real human needs? • Could more ecologically sound materials be used, or more ecologically sound methods applied in the enterprise? • Is it necessary that the product be as highly processed, be transported to such an extent, be stored as extensively, or be advertised as heavily?	• In the production and use of the product, is the principle of adequacy applied? Do people use this product in greater quantities or more often than is needed to meet human needs in an adequate way? • Could the product still be adequate for human needs if it were made in a more minimal form?	• Does one's role as a worker in the productive process, or as a consumer, enhance one's sense of 'ecological self' by strengthening a sense of connectedness with the natural environment, with other people and with future generations? • Does it promote a transcendent sense of being human, and an ethical commitment to a purposeful life? • Does it reflect a wish 'to be' rather than 'to have'?
• Is the product advertised in a way that enhances a sense of social cooperation?		• Does the advertising of the product involve discrimination, or stereotyping, or detract from the dignity of people?	• Are certain cultures stereotyped or demeaned by the advertising of the product?			
• Is the product retailed in a setting and manner that encourages social interaction?		• Are retailing employees treated fairly? Does the retailing process involve invasion of privacy?				
• Do the product and its use reflect and enhance the culture of the people and encourage a sense of community? • Can the use of the product be socially divisive or disruptive?		• Is the product available to all people who may need it?	• Is the product available to all peoples of the world who need it?			
• Are communities disrupted by disposal of waste from the product?		• Is the burden of waste disposal borne justly?	• Are waste materials exported unfairly to another country?	• Could the product be more durable, or more amenable to repair, reuse or recycling?		

RESOURCE 6

PROPOSED ACTIVITIES

Select one of the concepts or issues from the 'P-CAR and Critical Perspectives' web. Think about possible classroom activities for developing students' understanding of that concept or issue. In the appropriate space below, make some initial notes about that proposed activity.

Issue: _____

POSSIBLE ACTIVITY	DETAILS OF THE ACTIVITY
1. Research	
2. Fieldwork (survey, interview, site study...)	
3. Debate/Discussion	
4. Role-play	
5. Simulation	
6. Creative Writing	
7. Artistic Expression	
8. Other	

READING 1

GREEN CONSUMERISM: SOME CONTRADICTIONS

Source: Huckle, J. (1990) Green Consumerism - Exploring the Contradictions, *Annual Review of Environmental Education*, No. 3, pp. 37-39.

Few of our pupils or students can fail to have noticed that 1988/89 saw the re-launch of green consumerism in new and persuasive wrappings. They will have noticed the advertisements for lead free petrol, CFC free aerosols, and other 'environmentally friendly' products, . . . will have watched a succession of media personalities imploring them to join the green consumer revolution, . . will have noticed some small changes at the supermarket, . . and may have sat through lessons which, directly or indirectly, blamed them for such environmental problems as the destruction of the rainforests or global warming.

Some of their teachers will be old enough to remember Jonathan Holliman's *Consumers' Guide to the Protection of the Environment* [1], published in 1971. Like the current bestselling *Green Consumer Guide*[2], this offered background information on environmental problems and their links with consumerism. It provided advice on 'environmentally friendly' products, and suggested strategies whereby individuals could 'change to a way of life more related to the ability of the environment to support our real needs'. Green consumerism was at that time a minority interest amongst more radical environmentalists. It was not significantly co-opted by manufacturers and retailers and it faded from view as the economic recession, of the late 1970s and early 1980s, introduced new concerns.

With the upturn in the economy, and renewed prosperity for some, green consumerism has re-emerged as part of the current wave of environmentalism[3]. There are profits in the environment for some branches of capital, and manufacturers and retailers have not been slow to realize the possibilities of green consumerism in markets nearing saturation. While some of their claims have prompted Friends of the Earth to revisit the concept of 'ecopornography' (exploiting green concern) introduced in the earlier consumers' guide, it is the deeper contradictions thrown up by green consumerism which point to its educational potential.

The treadmill of production and consumption

In a classic text of modern environmentalism, Allan Schnaiberg[4] explains why the analysis of environmental problems cannot be separated from social structures of economic and political power. The pre-occupations of some environmentalists with population growth, resource scarcity, inappropriate technology, or consumer affleuence, are misplaced. The fundamental cause of environmental problems lies in forms of economic production and development determined by small minorities with considerable power. Their decisions shape economic development which then shapes population levels, resource use, technological innovation, and patterns of consumption. Any genuine attempt to resolve environmental problems should therefore focus on the democratization of social structures so that the majority are able to realize their common interest in sustainable development and greater social justice.

Schnaiberg describes the accelerating treadmill of production and consumption which formed the foundation of post-war social democracy in countries like Britain. In the interest of capital accumulation or profits, workers, firms, and governments were all sold an ever expanding range of wants and these were satisfied by ever more wasteful and damaging production. The treadmill was not without its benefits but in seeking to delay the onset of economic and political limits in growth, its controllers hastened the approach of ecological limits in a way which earlier environmentalists had predicted. Consumer society delays market saturation and keeps the voters happy, but we are now more aware of the untold damage it does to countless people and environments around the world[5].

The treadmill lost momentum for a time during the world recession but is now picking up speed again. Its productive forces have been significantly restructured in the past ten years and in Britain this has resulted in significant social and environmental change. There has been an attack on the protection provided by the welfare state, the emergence of new environmental problems linked to the enterprise economy, and a renewed emphasis on individual materialism. Mrs Thatcher's government has used tax cuts, credit, and consumerism to maintain its support but with manufacturing industry largely gone, its policies have precipitated a balance of payments crisis and high interest rates.

The five 'R's point to a green economy

The nature of the treadmill means that attempts to green the economy or patterns of consumption will inevitably raise contradictions unless they transform its underlying logic. During the past year, Sandy Irvine has highlighted the contradictions associated with green consumerism both in an article in *The Ecologist*[6], and in a letter to *The Guardian*[7]. In his view, it focuses attention on producing and consuming better rather than on producing and consuming differently and less. It diverts attention away from the need for global resource redistribution to enable sustainable development in the South, and it perpetuates the values of consumer society rather than advancing an ethic of sufficiency and greater self-reliance. A truly green consumerism would, in Irvine's view, reflect the five 'R's. It would *refuse* unnecessary goods and services and would be commited to *reduction, reuse, repair,* and *recycling*.

In line with Schnaiberg's emphasis on social structures, Irvine also reminds us that there are real limits to what individual consumers can achieve. Putting different goods in our shopping basket may result in worthwhile changes but much of our consumption is determined for us by those with economic and political power. The government's obsession with road building and private transport is one example. An increasing number of people do not have the option of giving up their cars and opting for the bus, train, or tram.

Environmental problems can therefore only be resolved by transforming the treadmill and replacing it with a democratically planned green economy driven by radically different imperatives. There are several guides to how such an economy might work[8] and these stress the value of such innovations as decentralisation, appropriate technology, workers' co-operatives, arms conversion, resource taxes, job sharing, and a guarateed basic incomes for all. Establishing socially useful and ecologically sustainable forms of production and development will require considerable political struggle. This is taking place on numerous sites within society; including schools and classrooms.

What We Consume

In 1984, the World Fund for Nature established its 'Global Environmental Education Programme'. I was asked to coordinate a module, *What We Consume*, which would allow pupils to examine the goods and services they consume and their links with environment and development issues around the world. Five of the module's ten units are now published[9], together with the Teachers' Handbook, and they represent an attempt to establish a more socially useful form of environmental education in our schools. They also provide considerable scope for exploring the contradictions associated with green consumerism.

It is the deeper contradictions thrown up by the green consumerism which point to its educational potential.

What We Consume provides a curriculum framework and classroom activities for teachers wishing to explore the social causes of environmental problems and possible solutions. One hundred original activities, in ten units, link pupils as consumers to economies and societies around the world. They enable them to study different forms of development and underdevelopment, recognise the impact that these have on nature and the environment, and consider alternatives which are more ecologically sustainable. The activities are designed to investigate key ideas, using key questions and concepts, and these continually focus pupils' attention on social structures and processes. In this way the module develops economic awareness and political literacy within the context of environment and development issues, and also gives prominence to groups which link sustainable development to an extension of democracy.

The module's rationale is fully explained within the Teachers' Handbook. Its chapters explain why environmental education should be regarded as social education. They also provide teachers with an overview of society and nature in the contemporary world and a selection of readings chosen to provoke reflection on the teaching of environment and development issues in schools. The module's units sample the main concern of the World and UK Conservation Strategies and the main forms of political economy found in the modern world. In addition to activities and copyright free activity sheets, they also include articles, photographs, cartoons, and a photoset. I would be interested to learn of *Annual Review* readers' views of the module and of how it is being used in schools.

The struggle for socially useful education

The development of *What We Consume* has not been free from tensions and problems and these may, one day, form the basis of another article. For the moment, it is sufficient to mention that the work continues and that Unit 3, *Our Consumer Society* is my current pre-occupation. The relaunch of green consumerism has therefore come at an appropriate time and the Unit's activities will explore some of the contradictions outlined above. They will also examine the desirability of green socialist al-

ternatives to present forms of production and consumption and in this way, seek to advance socially useful production in our schools.

Just as green consumerism raises questions about what constitutes 'environmentally friendly' production and consumption, so an emphasis upon environmental issues within the science or geography National Curriculum raises questions about what constitutes 'environmentally friendly ' schooling. Current developments in both sites throw up contradictions to explore and generate the space within which we can advance critical forms of environmental education. If you are sympathetic to my argument, I hope you will have a look at *What We Consume*.

References

1 Holliman J, *Consumers' Guide to the Protection of the Environment*, Pan/Ballantine, 1971.

2 Elkington J, and Hailes J, *The Green Consumer Guide*, Gollanz, 1988.

3 Green consumerism has resulted in numerous guides and magazines including:

Christensen K, *Home Ecology*, Arlington, 1989.

Seymour J & Giradet H, *Blueprint for a Green Planet*, Dorling Kindersley, 1987.

Ethical Consumer, ECRA Publishing Ltd., 100 Gretney Walk, Moss Side, Manchester, M15 5ND.

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4 Schnaiberg A, *The Environment: from Surplus to Scarcity*, OUP, 1980.

5 Trainer T, *Abandon Affluence*, Zed Books, 1985.

Trainer T, *Developed to Death*, Green print, 1988.

Seabrook J, *The Race for Riches*, Green print, 1988.

6 Irvine S, 'Consuming Fashions? The Limits of Green Consumerism', *The Ecologist*, 19/3, 1989.

7 Irvine S, 'Five 'R's: an order of priorities for green consumerism', letter to *7*, 2.10.89.

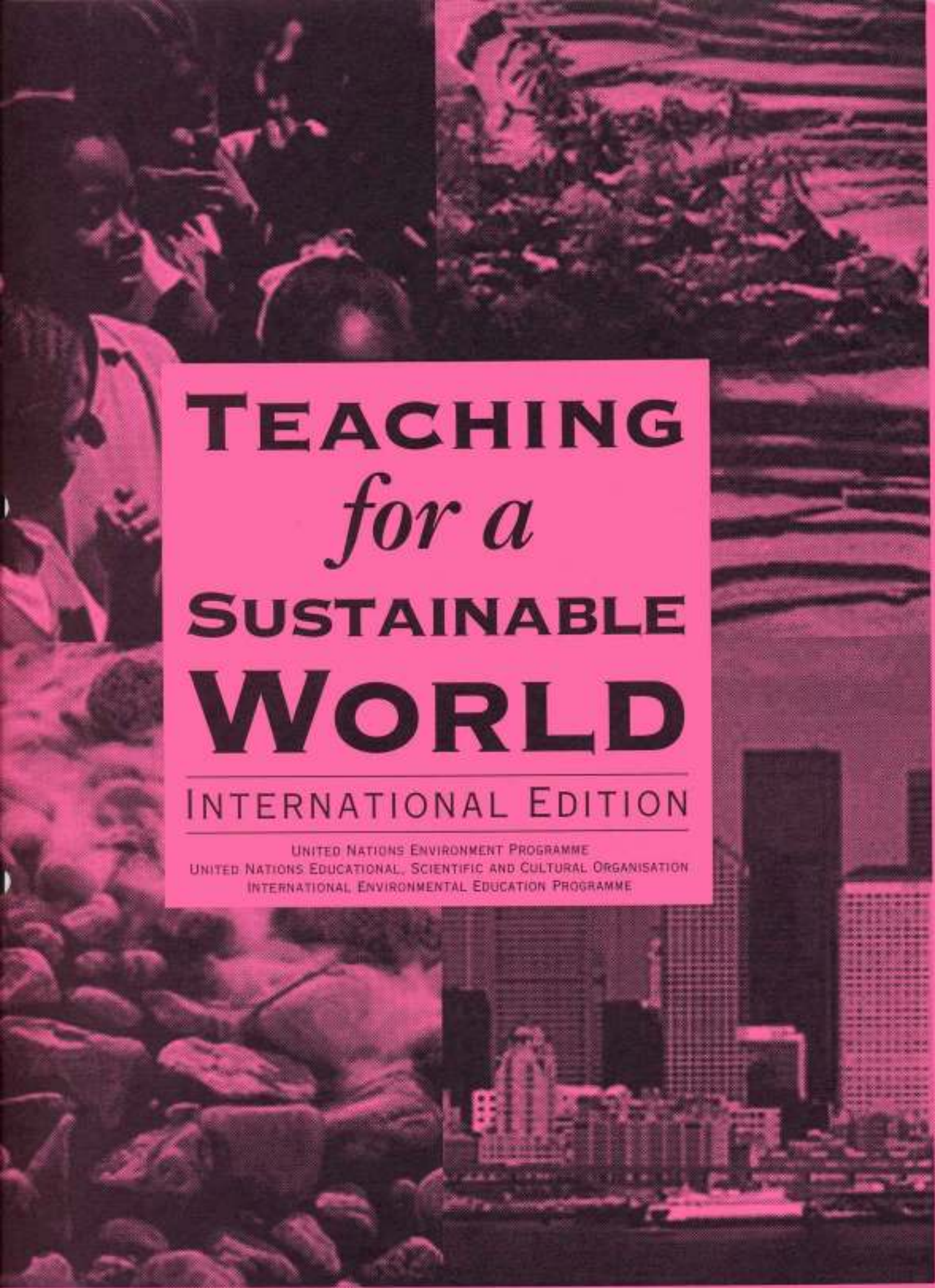
8 Hodgson G, *The Democratic Economy*, Penguin, 1984.

Bodington S et al, *Developing the Socially Useful Economy*, MacMillan, 1986.

Dauncey G, *After the Crash: the Emergence of the Rainbow Economy*, Greenprint, 1988.

9 *What We Consume* is published by The Richmond Publishing Company and can be ordered from WWF-UK Education Distribution, c/o The Richmond Publishing Co Ltd, PO Box 963, Slough SL2 3RS.

In addition to co-ordinating 'What We Consume', John Huckle is the author of 'Consuming Interests', a unit in a course on environmental issues to be jointly published by NALGO and the National Extension College in 1990. ■



MODULE 17

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID
AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT
AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC.
GRIFFITH UNIVERSITY

WOMEN ENVIRONMENT *and* DEVELOPMENT

JANE WILLIAMSON-FIEN
QUEENSLAND UNIVERSITY OF TECHNOLOGY
AUSTRALIA

INTRODUCTION

Women and men inhabit different environments and they use their environments in different ways. This workshop explores a range of women's environments. It addresses the various ways in which the processes of development have changed women's traditional environments while creating new female habitats. It also considers some of the strategies that women are using to protect and recover their environments. The workshop concludes with participants identifying a set of criteria that will promote sustainable development for women and their environments.

OUTCOMES

As a result of completing this workshop, participants should be able to:

- identify a range of women's environments;
- evaluate the impacts of the processes of development on women's environments;
- appreciate the range of strategies that women have adopted to protect or recover their environments;
- empathise with women's concerns about their environments;
- identify a set of criteria necessary for the promotion of sustainable development for women and their environments; and
- identify opportunities for incorporating the issues and activities from the workshop in their teaching.

WORKSHOP OUTLINE

This workshop contains eight activities.

1. Personal Environments

In this warm-up activity, participants are asked to identify the nature and extent of their own environments.

2. Women's Domestic Environments

This activity explores women's domestic environments. It asks participants to consider how women's domestic environments might be improved.

3. Work Environments of Western Women

Statistical data are used in this activity to identify the types of work environments in which western women are to be found.

4. Women Farmers

This activity examines the endeavours of women farmers. Participants identify the factors that affect women farmers and the changes that are needed to improve their lives.

5. Women as Industrial and Service Workers in, and from, the South

This activity uses case studies of women workers both in and from the South. It examines the implications for these women of western-style development practices.

6. Women's Environmental Activism

Four case studies of women's environmental activism are used in this activity to consider the types of issues that women are concerned about and the range of strategies they are using to promote change.

7. Criteria for Sustainable Development

In this activity, participants develop a set of criteria which will promote sustainable development for women and their environments.

8. Curriculum Applications

Participants identify where the themes explored in this workshop can be incorporated into the syllabuses they teach and plan a lesson on one of the themes.

MATERIALS REQUIRED

A) PROVIDED

RESOURCES

Resource 1: Work Environments of Western Women and Men

Resource 2: Jane's Story

Resource 3: Mariama's Story

Resource 4: Sithembiso's Story

Resource 5: Jan's Story

Resource 6: Selina's Story

Resource 7: Noi's Story

Resource 8: Cathy's Story

Resource 9: The Chipko Movement

Resource 10: Kenya: Creating Islands of Green

Resource 11: Maria Cherkasova

Resource 12: Michiko Ishimure

B) To Obtain

Activity 2: Plans or diagrams of domestic environments are needed for this activity. Sometimes these can be found in building company advertisements in newspapers. Alternatively, participants could be provided with simple plans which are typical of the domestic dwellings or domestic compounds that are found in their communities. Participants will need to be supplied with large sheets of paper and coloured pencils for this activity.

Activity 3: Participants will need to be supplied with large sheets of paper and coloured pencils for this activity.

Activity 8: This activity requires a selection of relevant syllabuses and lesson plan headings.

ADDITIONAL READING

Afshar, H. (ed.) (1991) *Women, Development and Survival in the Third World*, Longman, London.

Braidotti, R., Charkiewicz, E., Hausler, S. and Wieringa S. (1994) *Women, the Environment and Sustainable Development*, Zed Press in association with INSTAW, London and New Jersey.

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ACKNOWLEDGEMENTS

Resource 1 has been extracted from United Nations data on women (UN 1991). Resource 2 (Jane's Story) comes from a radio interview with Jane Tassie by the Australian Broadcasting Commission. The interview was subsequently published in J. Rigg and J. Copeland's book *Coming Out* (Nelson and the ABC, 1985). Resource 3 (Mariama's Story) was first published in an article by S. Hobson entitled 'Bulldozed' (*New Internationalist*, January 1984). Resource 4 (Sithembiso's Story) was extracted from an interview which Sithembiso did with students at Roseworthy Agricultural College, South Australia, in 1991. The interview was published as 'A Living from the Land' in *Youthpower* (Spring 1992). Resource 8 (Cathy's Story) and Resource 12 (Michiko Ishimure) are based on information provided by Yayori Matsui. Cathy's Story comes from Matsui's (1987) *Women's Asia* while the details

on Michiko Ishimure have been extracted from Matsui's (1975) article 'Protest and the Japanese Woman'. Resource 9 (The Chipko Movement) comes from Weber (1989), while Resource 10 was originally published in *Newsweek* magazine (March 9, 1992). Resource 11 (Maria Cherkasova) has been extracted from Ress (1992). Finally, Resources 5 (Jan's Story), 6 (Selina's Story) and 7 (Noi's Story) were developed by the author for her text, *Women's Voices* (Williamson-Fien 1993).

1. Personal Environments

This activity asks participants to identify the nature and extent of their own personal environments.

- Ask participants to work in pairs to discuss:
  - the extent to which they have access to personal physical space, e.g. personal sleeping space, personal recreation space, etc.;
  - the extent to which they have access to communal space and the range of activities they can undertake in that space;
  - whether there have been times in their lives when their access to particular physical spaces have been constrained; and
  - the nature of the factors that produced those constraints.
- Invite a number of the participants to share their observations with the rest of the group.
- Use the comments of participants to debrief from the activity ensuring that two sort of constraints associated with age, gender, class and race are debated.

2. Women's Domestic Environments

This activity explores domestic environments. Such environments might include: the domestic dwelling or dwellings, outhouses, sheds, etc., as well as any yards or gardens associated with the dwelling. In some instances, a domestic environment might be designated 'a domestic compound'. In other instances, a domestic environment might constitute a small apartment. These differences have implications for women and the tasks they undertake in the domestic sphere. The activity also asks participants to consider how women's domestic environments might be improved.

- Explain to participants that they are going to work in small groups to examine the nature of domestic environments in their community and consider what the construction of physical space might mean for women.
- Form groups of 3-4 participants. Give each group a set of floor plans or diagrams of domestic environments typical of their community.
- Ask the groups to consider:
  - the groupings of people that they would expect to live in these domestic spaces and the activities that such people might undertake in them;
  - the arrangement, size and placement of spaces traditionally associated with female labour in the domestic environment; and
  - whether the arrangement, size and placement of these spaces is appropriate for the tasks that women usually undertake.
- Invite each group to share its observations with everyone else.
- Provide each group with large sheets of paper and coloured pencils. Ask them to design a domestic environment that would be woman-friendly. This might involve making adjustments to the plans they have used above. It might involve redesigning the space completely.
- When thinking about this task, ask participants to consider:
  - the tasks that women currently do in the domestic environment and whether their redesigned spaces increase the workload of women. (For

example, increasing the size of some spaces might also increase the amount of cleaning and general maintenance that women are expected to do.)

- whether their redesigned spaces have undesirable effects on other environments. (For example, certain labour-saving devices might help to reduce the workload of women but might also have undesirable effects on the natural environment.)

- Invite the groups to share their designs with everyone else.
- Discuss with participants:
  - the extent to which a focus on improving the domestic environment for women tends to reinforce stereotypical notions of where women ought to be located and whether this is a concern for participants;
  - the extent to which women can control or change the nature of their domestic environments; and
  - the problems participants faced in producing women-friendly domestic environments which were sensitive to other environmental contexts.
- Note to facilitator: If participants have difficulty accepting the possibility that the creation of women-friendly domestic environments can be consistent with sensitivity to natural environments, point out to them that some of the case studies they will examine in Activity 6 should encourage them to reconsider their position.

3. Work Environments of Western Women

In this activity, participants utilise statistical data to identify the types of work environments in which western women are found.

- Distribute copies of Resource 1 to participants and ask them to examine it carefully.
- Explain to participants that they are going to work in small groups of 3-4 people and use Resource 1 to develop the main points of a newspaper article on the work environments of western women.
- Move participants into small groups. Ask them to discuss and decide upon:
  - a 'punchy' title for the article; and
  - the *four* main points they would want to develop in the article.
- Distribute large sheets of paper and coloured pencils to the groups. Ask each group to develop a simple poster which includes the group's proposed title and its four points.
- Invite each group to display its poster and explain to the rest of the participants the significance of its title and the four main points that have been identified as important.
- Discuss with participants:
  - the effectiveness of the titles in attracting attention, identifying the issues, etc;
  - the range of main points that were selected; and
  - the extent to which the selection of the main points indicated similarities and differences across the groups and what these similarities and differences might suggest about their perceptions of the work environments of western women.

- Discuss the following with participants if these issues have not arisen in the earlier displays and discussions:
  - the explanations that might be offered for the positioning of women in particular work environments;
  - the types of wages and conditions that women might experience in their paid work;
  - the connections between the unpaid work that women do and the nature of their work in other work environments;
  - whether participants found the data surprising and the reasons for any surprise; and
  - the extent to which statistics provide useful information on women's work environments.

4. Women Farmers

This activity examines the endeavours of women farmers. Participants identify the factors that affect women farmers and the changes that are needed to improve their lives.

- Indicate to participants that they are to work in pairs. Provide each pair with Jane's Story (Resource 2) and Mariama's Story (Resource 3) which they are to read.
- Ask participants to work in their pairs to compare and contrast:
  - the range of farming activities the two women undertake;
  - the problems they face as farmers; and
  - how those problems might be overcome.

  (Pairs could role play a conversation between the two women as a way of exploring these issues.)
- Ask some of the pairs to share their responses with the whole group. Discuss the responses.
- Discuss with participants the factors that discourage the recognition of women as farmers and the extent to which these barriers are challengeable by individuals.
- Provide each pair of participants with Sithembiso's Story (Resource 4) and Jan's Story (Resource 5). Ask them to compare and contrast:
  - the concerns that Sithembiso and Jan have about women in rural areas;
  - the actions that Sithembiso and Jan have taken and the extent to which those actions have improved the situation for women farmers; and
  - their perspectives on what appropriate development might mean.

  (Role plays are possible here too.)
- Ask some of the pairs to share their responses with the whole group. Discuss the responses.
- Discuss with participants:
  - whether the actions taken by Sithembiso and Jan have any bearing on the problems faced by Jane and Mariama;
  - what the case studies suggest about the implications for women farmers of western-style development;

- the range of changes that are needed to improve the position of women farmers; and
- how these changes might be achieved.

(Note to facilitator: A number of teaching resources exist which will allow participants to extend their appreciation of these issues. They include *Maromiya*, a simulation board game, and *Man-Made Famine*, a video. Further details are in the Additional Reading List.)

5. Women as Industrial and Service Workers in, and from, the South

This activity uses case studies of women workers both in and from the South. It examines the implications for these women of western-style development practices.

- Explain to participants that they are going to work in groups, with each group examining a case study of a woman industrial or service worker from the South.
- Move participants into *three* groups. Provide the first group with copies of Resource 6, the second group with copies of Resource 7 and the third group with copies of Resource 8.
- Ask each group to appoint a spokesperson who will report on the group's findings.
- Ask the groups to consider:
  - how western-style development has changed the nature of the woman's life and work;
  - how the woman feels about the new environment in which she finds herself; and
  - whether the woman will find it easy to return to and fit into her old environment.
- Invite each spokesperson to:
  - outline the story of the woman that his/her group has investigated; and
  - describe the groups findings.
- Discuss with participants:
  - the other types of service and industrial work that women from the South might do;
  - whether women industrial and service workers in their community are confronted with similar working environments to those experienced by Selina, Noi and Cathy;
  - the range of work environments experienced by any migrant women to their community;
  - how women in other parts of the world might be affected by or benefit from the work of Selina, Noi and Cathy; and
  - how they would feel if confronted with the sort of changes to their lives that Selina, Noi and Cathy have faced.

6. Women's Environmental Activism

Four case studies of women's environmental activism are used in this activity to consider the type of issues that women are concerned about and the range of strategies they are using to promote change.

- Divide participants into *four* groups.
- Explain to participants that each group will be provided with a case study of female environmentalism. Each group will then examine and discuss its case study as preparation for the development and presentation of a short dramatic presentation based on its case study.
- Provide the first group with Resource 9, the second group with Resource 10, the third group with Resource 11 and the fourth group with Resource 12.
- Indicate to the groups that in thinking about their presentation they should consider:
  - the issues that concern the women or woman;
  - the types of strategies that the women or woman adopt to promote change; and
  - the extent to which those strategies prove successful.
- Ask each group to give its presentation.
- Discuss with participants:
  - the range of issues concerning the women in the case studies;
  - the range of strategies the women had taken;
  - the extent to which the women concerned have been able to achieve the changes they desired; and
  - what actions participants might want to take to support the women in the case studies.

7. Criteria for Sustainable Development

In this activity, participants develop a set of criteria which will promote sustainable development for women and their environments.

- Explain to participants that in this activity they are going to identify *ten* criteria which, if followed, would provide the basis of sustainable development for women and their environments. The ten criteria will form a code which can be presented to a range of individuals and groups.
- Discuss with participants the nature of sustainable development.
- Note to facilitators: It might be useful to introduce participants to the definition developed by the World Commission on Environment and Development. It said that:

  Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

- Discuss with participants what a definition of sustainable development for women might look like. Ask participants whether the World Commission's definition is useful in this context. In considering this question refer participants back to some of the issues they have already considered, including:
  - the nature of women's domestic environments and how these might be improved;

- the nature of women's work environments and the range of demands placed upon them;
- the impacts of western-style development on women; and
- the issues that have concerned some women activists and the strategies they have adopted to address these issues.

- As a whole group identify a working definition of sustainable development for women.
- Note to facilitators: If participants feel that a universal definition cannot be applied to the circumstances of all women, then ask them to identify a working definition that holds good for the women of their own community.
- Ask participants to work in pairs to reflect on earlier activities in order to identify *three* criteria which will promote sustainable development for women and their environments.
- Invite pairs to indicate their three criteria and use the blackboard to list all the possible criteria.
- Explain to participants that the maximum number of criteria needed is ten.
- Discuss with participants which ten criteria they would all be happy with. In deciding on a final set of criteria remind participants of the working definition they constructed of sustainable development.
- When participants have agreed on ten criteria, invite suggestions from participants about which individuals and groups should receive copies of their new ten criteria code.
- Discuss with participants how they will follow through and deliver the ten criteria to those individuals and groups that have been identified.

8. Curriculum Applications

In this activity, participants identify where the themes explored in this workshop can be incorported into the syllabuses they teach, and then plan a lesson on one of the themes appropriate to a subject and class they teach.

A. A Place in the Syllabus

Participants may require copies of relevant syllabus documents for this activity.

- Work in pairs to identify (i) a subject or syllabus, (ii) a year or grade level, and (iii) a syllabus topic where the following seven themes covered in this workshop could be taught:
  - Personal environments
  - Women's domestic environments
  - Work environments of western women
  - Women farmers
  - Women industrial and service workers in, and from, the South
  - Women's environmental activism
  - Criteria for sustainable development
- Note to facilitators: This activity need not be cross-curricular but could be done for a single school subject or syllabus with participants asked to identify (i) the year or grade level, and (ii) the syllabus topic, only.

B. Lesson Planning

- Ask each participant to identify one of the seven activities in this workshop around which they can plan a lesson which is suitable for a subject/class they teach. Assure participants that they may adapt the activities where appropriate. Provide participants with a range of suitable lesson plan headings, for example:
  - Subject and grade level
  - Lesson topic
  - Place in syllabus
  - Lesson overview
  - Key idea(s) to be taught
  - Objectives
  - Resources
  - Lesson introduction
  - Steps in the lesson
  - Lesson conclusion
  - Lesson timing
  - Self-evaluation strategy.

RESOURCE 1

WORK ENVIRONMENTS OF WESTERN WOMEN AND MEN

Source: Extracted from United Nations (1991) *The World's Women 1970-1990: Trends and Statistics*, UN, New York, pp. 102-104.

A. Indicators of Time Use: Distribution Between Women and Men of Unpaid Housework (% Share of Women and Men)

		Preparing Meals		Child Care		Shopping		Other H'work		Total	
		Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
	Year*	%	%	%	%	%	%	%	%	%	%
Australia	1987	76	24	78	22	60	40	53	47	68	32
Belgium	1966	94	6	81	19	76	24	83	17	85	15
Canada	1971	87	13	80	20	58	42	78	22	77	23
	1981	74	26	75	25	61	39	66	34	69	31
	1986	81	19	76	24	58	42	67	33	68	32
Finland	1979	82	18	77	23	57	43	54	46	69	31
France	1965	87	13	85	15	70	30	76	24	79	21
Netherlands	1975	83	17	77	23	65	35	84	16	79	21
	1980	80	20	79	21	63	37	86	14	79	21
Norway	1972	89	11	79	21	67	33	86	14	84	16
	1981	81	19	70	30	57	43	82	18	76	24
United Kingdom	1961	90	10	86	14	79	21	89	11	88	12
	1975	89	11	81	19	69	31	87	13	84	16
	1984	74	26	76	24	60	40	76	24	72	28
United States	1965	90	10	82	18	66	34	78	22	79	21
	1975	87	13	77	23	62	38	68	31	75	25
	1986	78	22	73	28	60	40	61	39	64	36
West Germany	1965	94	6	84	16	75	25	74	26	80	20

* The most up-to-date information available

B. Indicators of Women's Economic Activity

	Economically Active Population Aged 15 Years and Over									Occupational Groups (F/100M) 1980s			
	Women economically active (000s)		Economic activity rate (%)				Av. Annual growth % 1970-1990		Women as % of total	Admin managerial	Clerical sales	Production transport	Agric hunting
	1970	1990	1970	1990	1970	1990	F	M	1990	workers	service workers	workers labourers	forestry workers
Australia	1666	3037	37	46	82	77	3.0	1.5	38	42	138	28	30
Belguim	1100	1400	29	33	71	70	1.2	0.5	34	15	102	16	28
Canada	2808	5313	37	49	79	78	3.2	1.6	40	54	178	17	25
Finland	960	1200	53	57	75	70	1.1	0.4	37	20	140	18	82
Netherlands	1235	1900	26	31	74	71	2.2	1.0	31	14	127	9	27
Norway	472	875	32	50	79	75	3.1	0.5	41	28	252	18	38
United Kingdom	9077	10724	41	46	82	77	0.8	0.2	39	29	225	18	18
United States	31727	50531	42	50	78	77	2.4	1.3	41	61	183	23	19
West Germany	9704	10915	39	41	79	75	0.6	0.4	37	20	140	18	82

RESOURCE 2

JANE'S STORY

Source: Williamson-Fien, J. (1993) *Women's Voices*, Global Learning Centre, Windsor, pp.34-35.

Jane was a farmer. She worked a farm with her husband in South Australia. In 1985, she made the following comments on a radio program:

Our property is 540 acres. It's a mixed grazing property with sheep and cattle - we don't do any cropping. I'm full partner in the farm and I share 50 per cent of management and planning decisions and 50 per cent of the domestic work with my husband. I suppose the most physically taxing job I do is hay carting, which involves stacking square bales, taking them from the paddock and stacking them in the shed. A lot of women don't do that work because they haven't been encouraged to have a try. A lot of men don't do it either because it's very hard work but, although it is physically demanding at the time, after I've done it I feel very good. With just a bit of thought and ingenuity I know that women can do practically any job on the farm, using principles of physics or whatever, just using their heads.

Women's contributions are not recognised: even people who know the amount of work I do and have seen me doing it still find it very difficult to accept me as a farmer. They refer questions about the farm to Simon and expect him to answer them. They call him the boss, which annoys us both because we know that's not so. I've had a lot of trouble in the past with people like stock agents and people in machinery shops. Once when Simon was away a couple of my women friends from Adelaide were staying with me. We spent a day laying pipes from a tank to a trough and had a wonderful time working together, and at the end of the day we felt so good that we thought we would come down to town to celebrate with a few drinks and dinner. On the way I stopped in at the stock agents in Mount Gambier to get some gate saddles, which are like hinges.

I went and said, 'I'll have half a dozen saddles for the gates,' and the chap behind the counter said, 'does he want galvanised or plain?'

I said, 'I'd like them galvanised.'

'Which size does he want?'

'I'd like such and such a size.'

There was some other question, 'Does he know such-and-such?' to which I just said, 'Look, I know what I want ...' (that certain type of hinge). To me it was amazing; I felt I had some invisible man over my left shoulder that this person was talking to.

Another day, we finished shearing and were both very tired. We went over to a place in Victoria to inspect some sheep which we were considering buying. It was about 38 degrees and, as I say, we were tired. We were inspecting the sheep in the yard - I might preface this by saying that I had asked a few relevant questions of the man who owned the sheep and he answered me in a sensible way, in a way that recognised that I knew what I was talking about. The stock agent then turned to me and said, 'I suppose it's nice to get out and come for a drive.' It was 38 degrees and we'd travelled about 220km so it was hardly that. I thought, 'Listen mate, if you could have seen what I've done over the last week and a half...' and he was standing there with his big fat beergut..

I feel angry when that kind of thing happens. I find that to be acknowledged, not to be accepted, but just to have it acknowledged that I'm there, I have to really push myself up front and I get sick of doing that all the time. I have to stride up almost manfully and stick my hand out and say, 'How do you do, I'm Jane Tassie?' Even then, quite often at the end of the discussion they'll say, 'oh, well goodbye Simon, goodbye, um . . . er...', they don't even say, 'What was your name?', they just mumble and nod. So it is really hard to be recognised in that field. I think a lot of men feel that they would lose face if they admitted how capable their wives are.

The image of the farmer in the media is still the same, unfortunately. You have shows like the Country Hour, which constantly refers to farmers as 'he'. It used always to refer to the problems of succession on farms as 'the son taking over the farm'. I haven't noticed that has changed a great deal. There has been a little more attention paid to the capacities of women to run farms and to work on farms but not as much as I think is due. I think it's probably up to women to help one another.

(Jane has now left the land to work in women's health in Adelaide.)

RESOURCE 3

MARIAMA'S STORY

Source: Hobson, S. (1984) Bulldozed, *New Internationalist*, January, pp. 21-22.

Mariama is a farmer and until recently she farmed her own rice land in Gambia (West Africa).

Mariama notes:

> *When you're born, you're given land by your mother. It becomes your land. You can also get compound land from your husband; but if you marry a man who has no land to give you as your own, your mother's land is always there for you to support yourself. Even the village head man hasn't the right to take that land away from you.*

The rice fields provide the women of Gambia with both food and cash. They grow most of the country's rice, as independent farmers, and this has provided them with considerable control over their own lives while allowing them to fulfil their fundamental marital obligation - to produce food for their families.

To the women of Gambia, their rice fields are their domain. For generations, they have worked them without the assistance of the men. Nevertheless, the productivity of the women's fields has always been hampered by lack of technical support, facilities and credit. Last year women farmers received less than one per cent of government credit; the bulk went to male farmers for their seed, fertiliser and machinery. In the last eight years more than thirty times the money has been spent on developing irrigated land to the advantage of men, with relative small returns in rice; while women's traditional rice cultivation, which produces most of the country's rice, has been mainly ignored.

Mariama knows about the impact of such things:

> *We have to plough by hand. We hoe until the skin peels off our hands. We work like this because we haven't got machinery.*

Recently, the livelihood of Mariama, and thousands of other women in the Kerewan Samba Sira area, has been threatened by a major development project designed to make Gambia more self-sufficient in rice.

> *It began a year ago. A group of us were cutting rice that had ripened. Some had harvested half their fields; others were just beginning. All of us had spent several months working hard to ensure the success of our crop.*
>
> *Then the bulldozer came. It ploughed through our fields. We cried out and blocked the way. When the Gambian driver hesitated, then stopped, a white man climbed up and drove the machine right through our harvest.*
>
> *It destroyed everything. I couldn't do anything I just had to pray to God.*

Compensation has still not been paid to the 13 women farmers, 9 months after they lost their harvest and in June, hundreds of women farmers were ordered not to grow rice during the rainy season - rice they needed to feed their families. Food aid was to be provided, but the women doubted when it would come and to whom it would go. For months they lived in a state of anxiety until sacks of rice were distributed.

It is the women's rice land that has been acquired tor the new development scheme. Apparently the village headman leased their land, along with unused village swamp land for 50 years to the government. The women were not consulted, despite their traditional rights over the land, and they have no guarantee of its return.

The project document declares that 'the rights of women to use of land will be respected in land distribution deriving from the project'. But Mariama is sceptical.

> *I think this Project will distribute all the fields to the men. It was the same with earlier projects when we helped build them - but they gave the men all the plots. It was the World Bank that gave the land to the men. It was supposed to be given to both men and women, but in the end we got nothing. We think this will happen again.*

At 33, Mariama is a leading force among the women of her village. President of the Women's Society and organiser for the Young Farmers' Club, she helps to rally men and women farmers to work as a cooperative, to produce more food and to save money. Yet she is also a woman, the second of her husband's wives, the mother of seven children, three of whom have died. Her life is bound by domestic duties, her fertility and acceptance of the status quo.

> *If you marry a man, you have to serve him and obey him. Men are fed by women. In the morning you sweep your house, take care of the children, pound rice for breakfast and lunch, fetch wood and water. All the housework is done by women. Men don't do any. We work from early morning till night-time.*

As a woman, her labour can be called on by her husband in the fields. As a woman, she is expected to weed and transplant. The Project recognises that much of its success depends on the labour of women. But will women be given the opportunity to have their own plots and work as independent farmers?

> *If I don't have my own fields then I have to work as a casual labourer to earn what I need.*

Mariama is only semi-literate, but she recognises that such a situation makes her dependent on what work the Project has to offer and what its managers are prepared to give her

RESOURCE 4

SITHEMBISO'S STORY

Source: A Living from the Land, *Youthpower*, No. 14, Spring 1992, pp. 5-7.

Sithembiso comes from Zimbabwe in Africa She is concerned with land ownership and land use and is the founding Director of the Organisation of Rural Associations for Progress (O.R.A.P). O.R.A.P. has over 700 groups affiliated with it and is the largest grass roots non-government organisation in Southern Africa.

Sithembiso says:

Perhaps you would like to hear what happened to my own family? It's a very common story. In 1945, my parents were moved from their land in Matabeleland south to the Midlands to make room for soldiers returning from World War 2. It was very good, fertile land that we lost. The land tenure meant that we had to move to virgin land and start from scratch. There was no compensation for our old homes or the loss of our land. We were just moved out and our homes were destroyed.

Each family was given about 10 acres in the new area and as the families grew the land had to be worked more and more. Before, on our old land, there was room for us to shift cultivate and the land could regenerate itself.

I have seen a lot of changes in my own lifetime. When I was a child there use to be a lot of thick brush and a great variety of plants and animals and grasses. There was also a lot of underground water and the rivers were flowing full. But today these things do not exist any more because of the droughts, the economic situation, which has pushed people to stay on the land, and the land tenure system, which has pushed large numbers of people onto unsuitable land.

People had to rely on their surroundings for their livelihood. But sometimes if you go to a village where there is soil erosion, for example, you will tend to blame the people you see there, rather than look behind at the history of those people and see why the situation is what it is. The environmentalists accuse people of ignorance and not caring, or having too many children, of over-exploiting the land.. no one asks why they are there in the first place.

The women are the ones who suffer the most. Where the land has been overused and is becoming less productive, the men will usually go to the cities and try to find a job. But the women will remain in the village, to try to look after the family, or try to make a living from the land.

In my job I go to a lot of villages and find that they are occupied by women and children, and sometimes very old people. But the majority of young people and able-bodied men go to the cities to look for work. The women get overloaded with work - taking care of the children, the household, making a living.

My organisation is a village movement, we work at the village level. What we try and do is assist women, and the whole family, to make a living in the village situation. The first thing that we do is popular education, to make people aware that they should not blame themselves for what has happened to the land, and to understand the forces that have acted on them.

We also have to work within the culture. One of the things I have learned in my job is that this development work is not about what I know and can give, but about what people themselves know and can use. Our culture is rich. We are not a bankrupt continent, contrary to Western perceptions. We are rich in moral values, in spirit, in things that really matter.

One of the strategies that we are using (in O.R.A.P.) is to go back to our culture and understand how land is being used now, and how it could be used - how people should relate to land and nature. The main thing is that we really should learn to respect the land. This is our traditional way. You cannot respect the land if you do not understand it, or if you do not know much about it.

So the first stage for us is to learn about our environment, to learn about our trees, to learn about our forests and what they can do for us. What various types of plants are used for and how they grow and how they are taken care of. Also we need to learn about the relationships between the animals and insects in our forests, because all of nature is balanced.

The second stage is to use a different method of agriculture. We are changing it back from commercial monoculture, where you clear everything on the land and then plant a single crop. Now we are going back to multicropping. we plant all the crops together, just as in nature, There are bushes growing next to tall trees and little plants. We grow different things together - such as maize, groundnuts and millet. This is what we used to do before the introduction of Western methods of agriculture. Our old women know which crops we should plant together to enhance the soil, to control the insects, to keep the worms away from the seeds in the ground, to keep the birds off the crops. We are also returning to using compost and organic fertilisers, as we used to do.

The Western-style agriculture that has been introduced to our country has been very bad for it - for the land and for the people. For example, when you cut down all the trees and plough the huge fields, the soil becomes loose and the wind strips off all the topsoil.

Western-style education has taught us that the old ways are 'primitive' but we are now learning the wisdom and value of them. We are listening to the knowledge of the old people and setting up documentation centres in the villages.

I have found that in every human being there is a need and a push for change - in everyone there is a force towards a better world!.

RESOURCE 5

JAN'S STORY

Source: Williamson-Fien, J. (1993) *Women's Voices*, Global Learning Centre, Windsor, pp. 32-33.

Jan is a grazier. She owns and runs, with husband Michael, a 2270 hectare property, The Overflow, just south of Brisbane, Australia. Jan has always been connected with the land and with the grazing industry in particular. She grew up on her parent's central Queensland cattle property and, following a private school education in Brisbane, she returned to the land, working on a number of Queensland properties with her husband before they took over the Joyce family farm, The Overflow, in 1968.

In March 1992, Jan was elected President of the South East Queensland Branch of the United Graziers Association. This organisation is the direct descendent of the Darling Downs Pastoralists' Association, formed to counter the shearers in the 1890s. Until Jan's election, it had never had a women leader. At the time of her elevation to the presidency, Jan said:

> *I think my election ... is quite something for women. It was good that members had a vote. It's a positive statement about the role of women in the organisation.*

One year after her election, Jan acknowledges that she has 'worked harder than most to justify it' but she admits that this typically occurs when women achieve positions of power in male-oriented organisations.

Jan would like to see women having a higher profile in farmer organisations. She says:

> *Women have always had to get out and work side-by-side with men in the pastoral industry. Also, they often look after the accounts of the property because they have acquired business and computer skills. So women are heavily involved in the day-to-day work and decision-making in farming but they haven't received much encouragement to come forward, stand for election and become visible in the industry.*

The main reason for this lack of encouragement, Jan believes, is that men feel threatened or afraid when women start to become active. 'It's a male ego thing' she says. In the past, she points out, some producer associations discouraged women from attending their branch meetings and they organised separate programmes for women at their conferences, so that the women 'had no input into discussions'.

Things are changing, however, there are now a number of women like Jan in elected positions in other producers' organisations. But substantial barriers remain to women's participation in agricultural politics, not the least of which is the lack of time busy women farmers have to devote to additional activities.

Ironically, while Jan acknowledges that the rural recession has had a dreadful impact on families in the bush, she believes that it has proved to be a 'watershed for women'. With men leaving the land in search of additional work, the women left behind are 'taking on roles they have not done before; they are being forced to make decisions and become more independent'. Jan hopes that this new confidence and visibility will encourage more rural women to have their say in primary industry organisations.

Apart from insisting that women should be appropriately represented in producers' associations, Jan believes that women's experiences and insights can offer 'new perspectives on many issues'. Such perspectives will enable the associations to keep abreast of the concerns of the wider community, she argues. This seems clear in Jan's own case. For example, her busy schedule as housewife, grazier and industry leader has enabled her to empathise with other busy women who are looking for ways to reduce their work loads and simplify their chores. One aspect of this, which Jan is quick to point out, is the desire for convenience foods. She notes:

> *Many Australian women, who are usually the purchasers and preparers of meat for their families, want cuts of meat that are of consistent quality and which are easily and quickly cooked. The grazing industry has to recognise these demands and supply the market. We cannot afford to overlook these trends.*

Jan's concerns about producing for changing market requirements, along with a keen interest in animal welfare and a desire to promote unity across producer groups occupy a lot of her time and energy. In addition, she is acutely aware of the need to avoid what she calls 'development without progress', by which she means the application of new ideas, or new technologies, which do little to improve the final outcome, or the final product, but which might actually make the situation worse than it was before. The active involvement of more women in agricultural politics might help to ensure that this sort of development does not occur.

RESOURCE 6

SELINA'S STORY

Source: Williamson-Fien, J. (1993) *Women's Voices*, Global Learning Centre, Windsor, pp. 62-63.

Selina is a twenty year old Malaysian women. Like many women of her age and background, Selina left her rural home to find factory work in one of Malaysia's export processing zones. Selina is employed by a U.S. owned electronics firm which manufactures and tests silicon micro-chips in a factory in Penang.

The Malaysian Government has promoted an export-oriented, manufacturing sector as the means to achieve economic growth. Export processing zones, or free trade zones, were established by the government to promote this form of development. In these zones, foreign companies are provided with infrastructure services and land for factories. The main attractions for foreign investors, however, are tax incentives, e.g. tax holidays, and the availability of a cheap, non-unionised female labour force. Selina became one of the workers in this system.

Selina says:

When I started work with this company, I was put in the official test section where I had to look through a microscope to test the chips before they were bonded. It took me two weeks to get used to using the microscope. After the training period they set my quota at 15 trays a day. I think there are between 160 - 180 chips in each tray, so I tested about 3,500 chips a day.

At the moment my current shift starts at 6 am. It finishes at 2 pm. They don't allow us to talk during our work, but we can talk during our breaks. We have a 10 minute break at 8 am and a 15 minute 'lunch' break at 9.15 am.

Every two weeks they rotate our shifts. They seem to think we like this to happen, but it really makes life very difficult especially for those women who have children. Next week, I will start work at 2 pm and work through to 10 pm. It's difficult to readjust our sleeping and eating patterns and it makes it impossible for us to find additional work or study in our off-duty hours. I think they want to keep us dependent on them.

I earn the equivalent of about A$200 per month and I try to send as much of it as possible to my parents and five sisters at home. But I do have rent, food and transport costs. Also, my friends and I like to get dressed up in Western clothes, put on make-up and go out on dates. We would all like to find husbands here because, although we miss our families, it will be hard for us to return home and marry the men our parents have picked for us.

My parents are devout Muslims and they see my time here as temporary. To them, I am helping to support the family until I return home to marry. Then, maybe, one of my other sisters will come to work here.

But I quite like the freedom I have here and the Western lifestyle the company promotes. For example, each year the company runs a beauty contest which we are encouraged to enter. The first prize is a package tour to Medan (our nearest big city); second prize is a cassette player and third prize a night for two at the Rasa Sayang *- the most expensive hotel in Penang. My mother would be horrified if she knew about third prize. 'What would a good Muslim girl be doing at the* Rasa Sayang *for the night?' she would ask.*

Anyway, I will not be winning anything. Many of the girls call me 'Grandma' because working with the microscope has made my eyes bad and I have to wear glasses. Many of the workers here wear glasses. A number of us would like to do something about the conditions in the factory. Apart from eye strain, there are chemicals in the factory which burn if they are spilt. The company is opposed to us forming a union. They would sack us if they thought we were doing that. They prefer us to compete with each other rather than stand together.

We know that our company is American because Americans come to the factory sometimes and explain to us that the microchips are shipped to the U.S. when we have finished with them. I often wonder if there are women in the U.S. doing the same sort of work as me and, if so, what their conditions and pay are like.

(Adapted from: Grossman, R. (1985) Miss Micro, *New Internationalist*, No. 150, August, pp.12-13; Matsui, Y. (1987) *Women's Asia*, Zed Press, London, p. 33-40; Sunam, *Hard Labour*, Australia Asia Workers Links, Melbourne, 1992, p. 30.)

RESOURCE 7

NOI'S STORY

Source: Williamson-Fien, J. (1993) *Women's Voices*, Global Learning Centre, Windsor, pp. 56-57.

Noi is Thai. She comes from a poor province in northern Thailand but currently she is working in one of the Bangkok bars that 'service' foreign male tourists.

Noi says:

My parents are still in northern Thailand. My father works in an auto repair shop. With his salary he had to feed his 10 children. Because of this I could only go to fourth grade, so I only have basic skills in writing and reading.

For many years I didn't have any work and so I helped out in the house. Then a friend convinced me to come to Bangkok. When I arrived at the bus station in Bangkok, I was very confused, I didn't know where to begin to look for a job. At the bus station I met a lady who told me that she was there to recruit girls to work as waitresses. I went with the woman, stayed in her hostel and started work as a waitress.

I soon discovered that I could not earn enough as a waitress to pay for my room at the hostel. Soaporn, the hostel owner, suggested that she would introduce me to some men, tourists, and that part of the fee she charged would go to pay off my debts. I have since learned that Soaporn charged quite a high fee to my first customer - a virgin fee. I was only 17 at the time and I saw none of that money.

Since those days I have graduated to the bar business. The bar where I work is owned by Soaporn, her brother and a foreign businessman so we get many foreign men coming here to find girls and have a holiday. Unfortunately, because these men are on vacation they expect to be able to do exactly as they please. I sometimes wonder if they would do these things at home.

My bar work consists of dancing along side the other girls on a platform. At first I was very shy but I am used to it now. We all have numbers and if a customer wants to meet one of us he tells the bar manager and after our dance routine is over we are assigned to our customers.

I hate my work but I have little choice. I make enough to live on, approximately A$230 per month, but I'm still repaying my debt and a large part of what we earn at the bar goes to the bar owners. My only alternative would be to try and find alternative work on the streets, but I would not have the same protection as I do in the bar and I'm fearful of the actions the bar owners might take if I leave before paying off my debt. I have not been able to send money to my parents, which was one of the reasons for coming to Bangkok. My parents don't know anything about my work. I don't know what they would say if they found out.

I don't know what the future holds. I try not to think about it. But in a few years, I won't be earning what I am now. Disease is always a concern. At the moment AIDS is the main concern. We are tested every two months for AIDS and so far I'm alright. I have heard that there are a large number of girls who have tested positive but I haven't seen a lot of sick people. Perhaps the sick ones are thrown out onto the streets and they have to return their villages. We are warned to always use condoms but it's not always easy to talk about them when you are trying to be pleasing and earn some money.

Like many of the other women here, I dream of finding a way out of this business. Perhaps a rich foreigner will come and pay my debts, even marry me and take me away from here. But what would he know about me, about my culture, about my home? Some girls I know have had their names placed on marriage lists at agencies that provide brides for foreign men. One of my friends went off to West Germany, to marry an old man she didn't know. She was a committed Buddhist and she spoke no words of German. I don't know how she is managing, I have not heard from her since she left. I think I would prefer to stay here, but I don't know what I'll do.

(Adapted from Lenze, I. (1978) Tourism Prostitution in Asia, *Isis*, No. 13, 6-7; O'Grady, R. (1981) *Third World Stopover*, World Council of Churches, Geneva; The Time Bomb of AIDS in Thailand, *Background Briefing* (Summer Season), A.B.C. Radio National, Jan. 10, 1993.)

RESOURCE 8

CATHY'S STORY

Source: Williamson-Fien, J. (1993) *Women's Voices*, Global Learning Centre, Windsor, pp. 20-21.

In one of the wealthiest residential areas on the east coast of Singapore, a thirty-two-year-old Filipino named Cathy works as a maid. She is a short, brown-skinned woman wearing a T-shirt and jeans. In the quiet late afternoon she sits on the veranda of the apartment where she is slowly rocking a sleeping baby in a hammock. The baby wakes and is fretful; Cathy takes her up in her arms and kisses her cheek. 'Shizu is such a darling that I forget I'm homesick,' she says with a warm smile. Her English is very good even though she speaks with a strong Filipino accent. Cathy begins to talk about herself. A typical Filipino woman, she is friendly and frank.

Four-months-old Shizu is the daughter of a Japanese businessman who employs Cathy, and his American wife who is working on behalf of refugees. 'When I am looking at Shizu she reminds me of my own four children left behind in my home country,' said Cathy.

Why did the mother of four children have to leave them and come to Singapore to work? Cathy was born in Visayas, in the central part of the Philippines, one of the most economically depressed areas. Her father is a primary school teacher, and her mother works for the local government. Cathy went to college and studied to become a laboratory technician but, even with her training, it was difficult to get a job because the Philippines is full of unemployed people. Finally, she was hired to work in a nature conservation bureau, but her salary was very low.

She married a local government official, but her husband was also poorly paid and even though they were both working, it was difficult to raise four children. This is why Cathy began to consider going abroad as migrant worker. Her sisters-in-law were already working in Singapore as maids. 'I heard that women who had migrated to Saudi Arabia had dreadful experiences, so I chose Singapore as I was told it was a safe place to work.' Cathy's father was opposed to her plan to work overseas. 'He felt that it was a pity that a college graduate had to become a maid,' Cathy says. Nevertheless, Cathy was determined to go. She applied to an overseas employment agency and for permission to leave the country.

Cathy's first job in Singapore made her very unhappy. Her employer was Chinese. She was unable to communicate with the family and was badly mistreated. Eventually she ran away but, because she had failed to fulfil the terms of her two year contract, she was forced to return to the Philippines.

Fortunately, before she left she was introduced to her present employer and, after spending some time at home returned to Singapore to begin working for this new family. 'The wife of my present employer is very warm and kind; I'm very lucky,' Cathy smiled. She earns Singapore $300 and $50 allowance each month (approximately $A320) which is the average pay for domestic helpers here. Sunday is her day off.

On Sunday I go to mass in the morning, and then to the Botanical Garden. This is the meeting place for the Filipinos and I can see my sister-in-law, cousins, and friends.

On Sundays the Botanical Garden in Singapore is crowded with Filipino women; they have lunch together, and sing and play guitars. It is really a holiday scene where the maids from the Philippines can rest and enjoy themselves. For Cathy, it is also a time for meeting with her relatives; her aunt, who was a teacher for many years, and six other family members are working in Singapore. They get together to forget the loneliness of living in a foreign country. Cathy usually leaves early to have time to write letters to her family.

Even on a working day, after I finish my job, I write letters to my children about school, study, play, behaviour, and such ordinary things. It is quite natural for a mother to be concerned about these issues. Fortunately, my mother-in-law is taking good care of them. My elder sons go to school and make very good marks. I am encouraged.

This mother of three sons, aged ten, eight, and seven, and a three-year-old daughter, is concerned about her children all the time. She carries their photographs with her everywhere she goes.

When I left home, my children saw me off and all of them were crying. It was very, very hard when my daughter, Sherila, cried, 'Mummy, don't go' and clung tightly to me. When some friend is going home I always send toys to my children.

Cathy weeps, but she adds:

Without education you cannot get out of poverty. I'm working hard now not only to earn my living, but also to save for the children's education so that they can grow up to be good citizens. My husband has recently written to me saying that he also wants to migrate to work in the Middle East. I have made up my mind to continue working here for another two years after this contract is up. Both of us are ready to sacrifice ourselves for the future of our children.

A college graduate mother has to bring up someone else's child far away from her own, and her husband is also planning to leave the family to work elsewhere. Such a case, where family members are living and working in different places, is not at all exceptional in the Philippines. More than one million Filipinos are working abroad. Men go to Middle Eastern countries as construction workers and women go all over the world as maids. More than 7,000-8,000 Filipinos, like Cathy, are working as domestics in Singapore. In 1988, more than 30,000 Filipino women were working as maids in Hong Kong.

(Adapted from Matsui, Y. (1987) *Women's Asia*, Zed Press, London, pp. 50-51.)

RESOURCE 9

THE CHIPKO MOVEMENT

Source: Weber, T. (1989) *Hugging the Trees*, Penguin, Hammondsworth.

India's hill forests are a critical resource, not only for the women who utilise them for gathering food, fuel and fodder but as a watershed, regulating water flow to the valleys below. Commercial logging in the Garhwel Himilaya region led to landslides and disastrous floods. In the 1970s local resistance to forest destruction gathered pace in the form of the Chipko movement ('Chipko' means to hug). In 1974, hundreds of women from the Chamoli District in Uttar Pradesh pledged to save the trees at the cost of their own lives if necessary. When the loggers arrived the women went into the forests and put their arms around the trees, telling the loggers that they would not be able to cut the trees before first killing them. The contractors withdrew and the forest was reprieved. The Chipko movement spread and many villagers began to guard the forests, fast for them and hug the trees to prevent them being felled. When forest officers accused the women of being foolish, saying 'Do you not know what the forests bear? Resin, timber and foreign exchange', the women replied. 'What do the forests bear? Soil, water and pure air! Soil, water and pure air are the very bases of life!'

RESOURCE 10

KENYA: CREATING ISLANDS OF GREEN

Source: *Newsweek*, March 9, 1992.*

When Sophia Kiarie moved from Kenya's forested highlands to the arid community of Ruiru 20 years ago, she was immediately struck by the lack of greenery. She looked out over the parched sisal fields and wondered where she could possibly find enough firewood for her family, including her husband and 11 children. So she began studying informally, asking Kenya foresters their advice and carefully observing the life cycles of different trees. 'Some died of drought', she recalls, poking a finger into the soft Kenyan soil. 'Others died when the hard rains came.'

Though she never took a class in forestry or botany, Kiaire, 41, learned quickly. 'I have a degree in understanding the problems of my area', she says with a knowing smile. She became a local field officer for the Geneva-based Bellerive Foundation, a non-profit organisation that focuses on environmental issues. That woke her up to the dangers of land degradation around Ruiru, about 20 kilometers north of Nairobi. Soon she opened a tree nursery, which has so far distributed more than 500,000 seedlings to schools, hospitals and individual farmers. In addition, Kiarie has led a successful campaign to conserve trees by promoting an energy efficient, low-cost stove designed by engineers from the Bellerive Foundation. The stove, which burns far less wood than the traditional stone-bordered fire, has become a local hit; more than 2,000 Kenyan families and 600 institutions now use one. 'I can convince people because I am a beneficiary of the product', says Kiarie. 'It's easier to convince people when they can identify with you.'

Kiarie is not just a local hero. Last November she was invited to Miami to attend the United Nations-sponsored Global Assembly on Women and the Environment, where she spoke about her crusade to establish scores of 'green islands' - plots of trees - around government institutions. Kiarie believes women are the key to a healthier future for Kenya and hopes to get more of them involved in her reforestation projects. 'Women know how to nurse', she says, gently tucking a tiny sprout into the earth. 'They have caring hands.'

* From *Newsweek*, March, 1992. © 1992 Newsweek, Inc. All rights reserved. Reprinted by permission.

RESOURCE 11

MARIA CHERKASOVA

Source: Ress, P. (1992) Women's Success in Environmental Management, *Our Planet*, 4(1), 16-17.

In the Soviet Union, in 1986, the Ministry of Energy and local authorities decided to build a huge, 200 metre high electric dam on the Katrun River in the Altai Mountains. They hadn't counted on Maria Cherkasova, a biologist and journalist. When she realised that the dam would flood a beautiful historic wilderness, destroy wildlife, erode fertile land and, by leaching mercury and other toxic substances out of the rocks, pollute the drinking water for millions of people, she spread the word, and small, militant committees for the Salvation of the Katun River were created in six cities. They soon won the support of thousands of citizens who started protest marches, signed mass petitions and organised meetings and letter-writing campaigns. Construction on the dam has been halted - at least for the moment.

Other consequences of the campaign are just as important. It raised nationwide Soviet consciousness about environmental issues, taught those involved a lot about environmental activism and led to the creation of an umbrella organisation of 200 Soviet environmental groups, the Socio-Ecological Union, under Maria Cherkosova's leadership. The Union established contacts with international organisations and has gone on to lead a wide range of successful environmental campaigns and activities.

RESOURCE 12

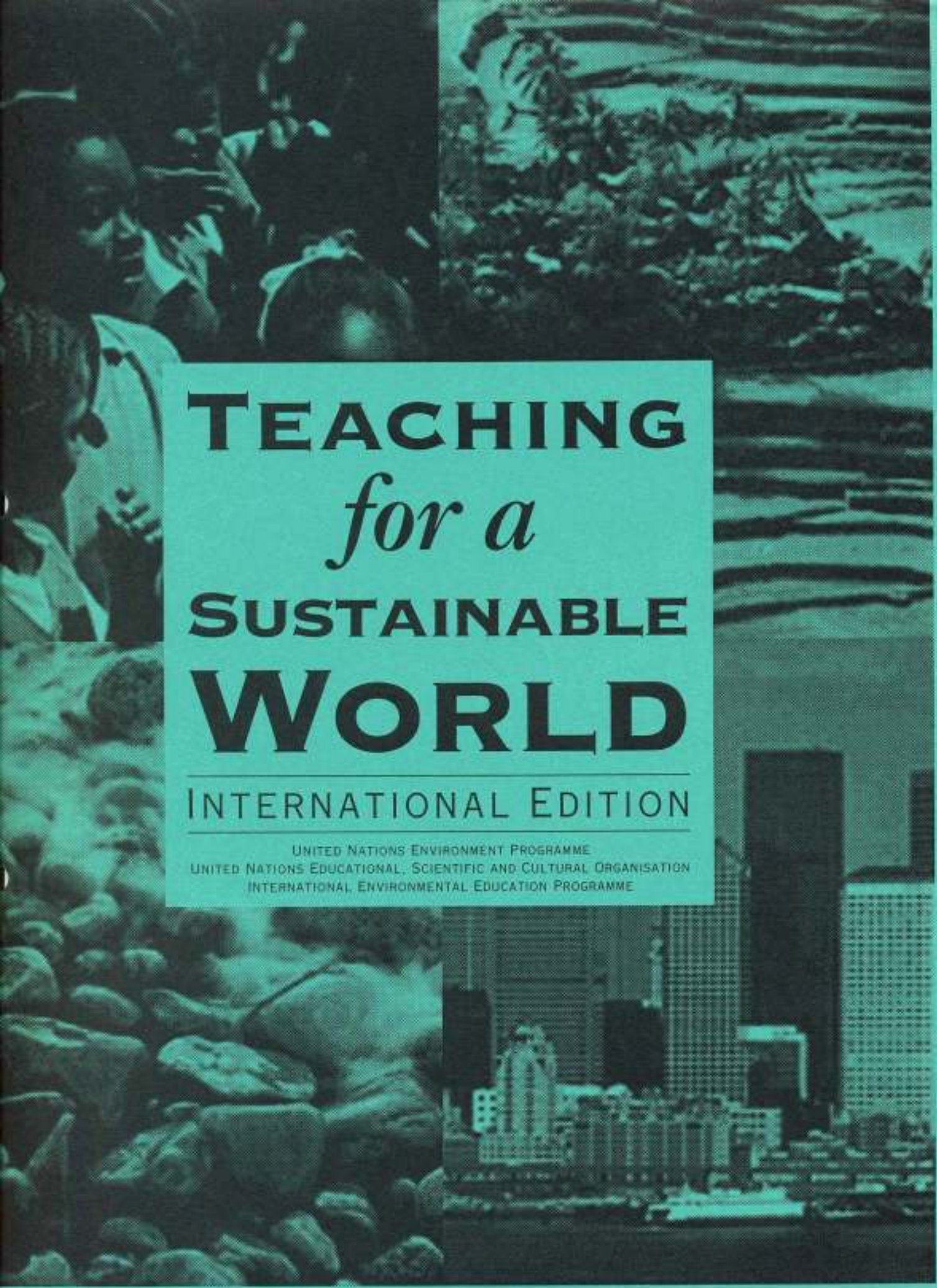
MICHIKO ISHIMURE

Source: Matsui, Y. (1975) Protest and the Japanese Woman, *Japan Quarterly*, 22(1), 31-32.

Towards the end of the 1950s, the people in a small fishing village on Minamata Bay in Kyushu, Japan, began to suffer from a terrible disease.

> *Their limbs were paralysed, their lips unmovable; and they cried aloud like dogs howling in madness. Japanese scientists discovered that this strange disease was caused by waste from Chisso Corporation's plant, located in Minamata City, which had polluted not only the coastal waters but also the fish and the shellfish.*
>
> *There was one woman visitor to this fishing village who made calls on these God-forsaken victims. She was Ishimure Michiko, a poet and housewife. She kept records of all she saw and heard during her visits to the victims. Among those upon whom she called were a blind boy who could not talk but fumbled for a baseball bat with which to hit at stones; a fisherman's wife who, longing to live a healthy life once more and to go fishing with her husband, died in convulsive agony; a beautiful little girl who lived a death-like life; and an old man who died in madness, rending the wall and hitting his head against the head-board of his bed. In profound sympathy, understanding and anguish, Ishimure Michiko wrote her documentary account in 1969, Kugai Jodo (Pure Land Poisoned Sea), which was subtitled 'Our Minamata Disease.' This documentary brought vividly to the attention of the Japanese people the true results of industrialisation, and an enormous reaction ensured. The book openly and effectively questioned the 'productivity-first and profit-first' attitude of industrialised Japan.*
>
> *Ishimure Michiko herself organised a civic group to assist victims of Minamata Disease and launched a movement to secure adequate compensation for them from Chisso Corporation.*

(N.B. This extract uses the Japanese convention of putting the family name first and the personal name second.)



MODULE 18

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
UNITED NATIONS ENVIRONMENT PROGRAMME

AusAID
AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT

AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC.

GRIFFITH UNIVERSITY

the POPULATION-FOOD DEBATE

JOHN FIEN
GRIFFITH UNIVERSITY
AUSTRALIA

INTRODUCTION

Two issues about development that always draw attention are population and food. Usually, these are considered together to produce notions of the problems of 'over-population' and 'the starving millions'. Such notions are Western constructions and do not really reflect the perspectives of people of the South on their situation nor do they take account of the processes that cause unequal development in the world. This workshop seeks to address misconceptions about food supply and population levels that result from these notions.

OUTCOMES

As a result of completing this workshop, participants should be able to:

- distinguish between the symptoms and the root causes of hunger and population pressure on food resources;
- present arguments that counter many misconceptions about hunger and population;
- empathise with perspectives from the South on these issues; and
- appreciate the issues and dilemmas in teaching about these issues.

WORKSHOP OUTLINE

The workshop contains seven activities.

1. Setting the Scene

Two introductory activities focus on the presentation of food and population issues and the reasons for, and problems in, teaching about these issues.

2. True or False?

This activity allows participants to express their views on statements about the causes of food shortages, hunger and famine and to consider possible solutions.

3. Editing the News

Participants work on editing a newspaper story that explores the scope of the world food crisis and some reasons behind it.

4. World Hunger: Ten Myths

Building on ideas developed in previous activities, participants critically examine myths about hunger and population.

5. Exploring Famine

A mini-lecture based upon a case study of the causes of the Sahelian famine of 1968-1974, followed by a discussion of parallels to present day famines and their causes.

6. Food First Fundamentals

Participants match up the myths encountered in Activity 4 with positive principles, or Food First Fundamentals.

7. Curriculum Applications

An activity in which participants evaluate a teaching activity on the global food system and suggest adaptations to their area of teaching.

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Headlines from History
OHT 2: Population Views
OHT 3: Population - Whose Problem?
OHT 4: Drought in the Sahel - Quotation
OHT 5: Classquake in Guatemala

RESOURCES

Resource 1: Views on Population and Hunger
Resource 2: Editing the News
Resource 3: Myths: True or False?
Resource 4: Exposing the Myths
Resource 5: The Causes of Drought and Famine in the Sahel
Resource 6: Ten Food First Fundamentals
Resource 7: Global Food Connections

READING

Reading 1: The Political Economy of Famine

B) TO OBTAIN

Activity 5: Resource 5 needs to be copied several times, cut up into slips of paper, and placed in an envelope. It is necessary to have one such envelope for each group of 4-5 participants.

ADDITIONAL READING

Abraham, J. (1991) *Food and Development: The Political Economy of Hunger and the Modern Diet*, WWF and Kogan Page, London.

Bread for the World Institute (1994) *Hunger 1995: Causes of Hunger*, BWI, Silver Spring.

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Timberlake, L. (1985) *Africa in Crisis*, Earthscan, London.

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ACKNOWLEDGEMENTS

The activities on hunger myths, Food First Fundamentals and the Sahelian drought in this workshop are based upon curriculum materials developed by the author for the UK Schools Council Geography 16-19 Project. They include: *Alternative Approaches to Development* (1985) and *Studying Natural Hazards* (1986) both published by Longman. The activity on global food connections is based upon an activity first developed by Ros Hall and published in J. Fien (ed.) (1989) *Living in a Global Environment*, AGTA Inc. and New Internationalist, Brisbane, Ch. 3.

ACTIVITIES

1. SETTING THE SCENE

This activity focuses on participants' perspectives of the issues involved in teaching about population and food issues.

A. Introduction

- Display OHT 1 which depicts a series of international newspaper headlines on population and food issues from a decade or more ago.

Ask participants to comment on whether or not - and how and why - the headlines on these issues are similar today.

- Display OHT 2 which illustrates a range of views on the causes and effects of population issues. Indicate the controversial and contested nature of most of the views.

B. Teaching Issues

- Number participants alternately 'A' and 'B'. Individually, 'A' participants are to make a list of reasons for teaching about population and food issues. Individually, 'B' participants are to make a list of dilemmas or problems in teaching about population and food issues.
- Group participants into pairs of 'A's and pairs of 'B's. Each pair is to pool its lists and decide on a combined list of its three best points.
- Form groups made up of a pair of 'A's and a pair of 'B's. The two pairs share their respective views on the reasons for teaching about population and food issues and the dilemmas or problems they might face.
- The members of each group write a paragraph to synthesise the views of each pair into a combined group view.

2. TRUE OR FALSE?

This activity allows participants to express their views on ten statements about the causes of food shortages, hunger and famine in the South and about possible solutions.

- Distribute a copy of Resource 1 to each participant.
- Ask participants to indicate on the sheet whether they believe each statement to be True or False and to give one fact they know to support their opinions.
- When this is completed, tell participants to put their completed worksheets aside to use later in the workshop.

3. EDITING THE NEWS

This activity helps participants explore the scope of the world food crisis and some reasons behind it. Participants take on the role of a newspaper editor preparing a story on 'The World Food Crisis Bites' for publication. Participants may work individually or in pairs. The instructions for this activity are on Resource 2.

- Distribute a copy of Resource 2 to all participants. Read through the instructions to ensure participants understand the activity.
- After the questions are completed, hear a range of answers paying most attention to the variety of perspectives given to Question 4 on the root causes of hunger.

- Remind participants that the Simmons' article is more than a decade old. Ask them to make a list of the examples that Simmons could use if he were writing the story today.
- Conduct a discussion on how similar or different the main message of the news report would be today.
- Display the cartoon, 'Population: Whose Problem' on OHT 3. Ask participants to read it carefully. Explain that it expresses Simmon's views on the root cause of hunger in cartoon form.
- Explain that many people in the South think that a major cause of hunger in their countries is *overconsumption* of resources in the developed countries. In terms of food resources, the richest quarter of the world's population eat two-thirds of the world's food production. Their animals eat fully one third of all of the grain produced in the world. A growing awareness of this situation has given rise to the idea that the 'population problem' is really a 'resource problem', or to put it another way, the 'population problem' has proved to be a 'population myth'.

4. World Hunger: Ten Myths

This activity builds on the notion of 'myths' developed above. It is based upon Lappé and Collins' critique of ten of the myths about hunger and population in their books, *Food First: Beyond the Myth of Scarcity* and *World Hunger: Twelve Myths*.

- Ask participants to return to their copies of Resource 1.
- Explain that Lappé and Collins believe that the correct answer to all ten statements is False.
- Ask participants to identify where they agreed or disagreed with Lappé and Collins. Ask for their perceptions and feelings about Lappé and Collins' assertions.
- Distribute a copy of Resource 3 to all participants. Ask them to complete Column 1 only. This requires them to make a list of the 'myths' they believed to be true.
- Distribute a copy of Resource 4 to all participants. This provides Lappé and Collins arguments for claiming each of the statements as myths. Ask participants to read only those sections of Resource 4 that relate to statements they believe are true.
- After reading Lappé and Collins's explanations, participants are given the chance to change their minds on any of the statements.
- Ask them to enter their 'second opinion' about them in the second column of Resource 3. In the third column, ask them to list the reasons for their second opinion. For example, if they now agree that a statement is a myth they list the Lappé and Collins points that convinced them of this. For statements they still believe to be true and not myths at all, they should list their points of disagreement with Lappé and Collins.
- Participants next examine the parts of Resource 4 that relate to points on which they agree with Lappé and Collins. Ask them to gather data from Resource 4 in support of the statements they believe are true, and enter this data at the appropriate points on their copies of Resource 1.

5. Exploring Famine

The previous activities have provided an explanation of global patterns of malnutrition and hunger based upon a political economy perspective. This same type of perspective helps explain why drought and other supposedly 'natural disasters' lead to periodic famine, sometimes on a sub-continental scale. This activity is a case study of the causes of the great Sahelian famine of 1968-1974. Participants are then asked to draw parallels to present day famines and their causes.

Mini-lecture

- Use Reading 1 to present a brief background to the 1968-1974 Sahelian famine.
- Display the quotation by a Sahelian farmer in OHT 4 to conclude the mini-lecture. Ask participants to explain what they believe the farmer is saying about the inevitability of the link between drought and famine.
- OHT 5 provides a similar perspective on 'natural' disasters. Display OHT 5 and ask participants to explain why Guatemalan people considered the 1976 earthquake to be a 'classquake'.
- Form groups of 4-5 participants. Give each group one of the envelopes containing the cut-up slips made from copies of Resource 5. Explain that the envelope contains a summary of some of the historical and political factors that turned the Sahelian drought into a famine.
- The groups have to read the slips of paper and give each one a heading or title. They then arrange them into a logical sequence to form a coherent explanation of the Sahelian famine.
- Groups report the 'slip titles' and the chosen sequence to each other.
- Ask participants to discuss and explain whether a similar style of explanation could be made of the social context of such 'natural' disasters as the 1983-1986 Ethiopian famine, flooding in Bangladesh, the Somalian famine of the early 1990s, etc.

6. Food First Fundamentals

Lappé and Collins believe that one solution to world hunger lies in identifying a number of *Food First Fundamentals* or principles. They argue that these principles can provide the basis for agricultural development policies that will guarantee an adequate and nutritional diet for everyone in the world.

Lappé and Collins found their Food First Fundamentals by studying the ten myths of world hunger (Resource 1) and their answers to them (Resource 4). From that study emerged ten positive principles for world agriculture. For example, from the first myth, 'People are hungry because of scarcity - both of food and land', they developed the Food First Fundamental : 'Every country in the world has the resources necessary for its people to free themselves from hunger'.

Resource 6 contains ten of Lappé and Collins's Food First Fundamentals. However, they are not in the same sequence or order as the myths presented in Resource 1. They have been mixed up.

- Ask participants to work in their groups to study Resource 6 and to rearrange the order of Food First Fundamentals so that they can be numbered 1-10 to match the myths numbered 1-10 in Resource 1.

- Ask the groups to select two Food First Fundamentals they believe would be:
  - the easiest to implement in their country;
  - the most difficult to implement in their country;
  - quite beneficial if they were implemented in their own country.
- Note: The correct order of Food First Fundamentals to match the ten myths is:

Myth	1	2	3	4	5	6	7	8	9	10
FFF	A	D	H	F	B	I	J	E	C	G

7. Curriculum Applications

This activity concludes the workshop. In it participants are asked to evaluate a teaching activity on the global food system and suggest how it may be adapted to their areas of teaching.

- Distribute a copy of Resource 7 to each participant and tell them it was originally developed for Years 9-10 students.
- Ask participants to study Resource 7, and:
  - Explain if and how it (a) contradicts or (b) helps explain the Third World perspective on food issues developed in this workshop. Why?
  - Evaluate if the activity is suitable for Years 9-10 students.
  - Explain how (a) the diagram and (b) the questions could be altered to make the activity suitable for another Year level and/or subject area.
  - Identify any other problems that they may need to overcome in teaching about global food connections, and how they would handle them.

OHT's

OHT 1

Headlines from History

POPULATION BOMB AND FOOD SHORTAGE: WORLD LOSING FIGHT FOR VITAL BALANCE

New York Times

WHY THE POPULATION EXPLOSION IS TOPPING THE AGENDA

The Guardian

TOO MANY BABIES CLOG INDIA'S DEVELOPMENT

The Times

DEVELOPING COUNTRIES: THE PROBLEM THAT WON'T GO AWAY

The Guardian

THE WORLD FOOD CRISIS BITES

The Guardian

OHT 2

Population Views



OHT 3

POPULATION — WHOSE PROBLEM?

Source: *New Internationalist*, No. 79 September 1979.

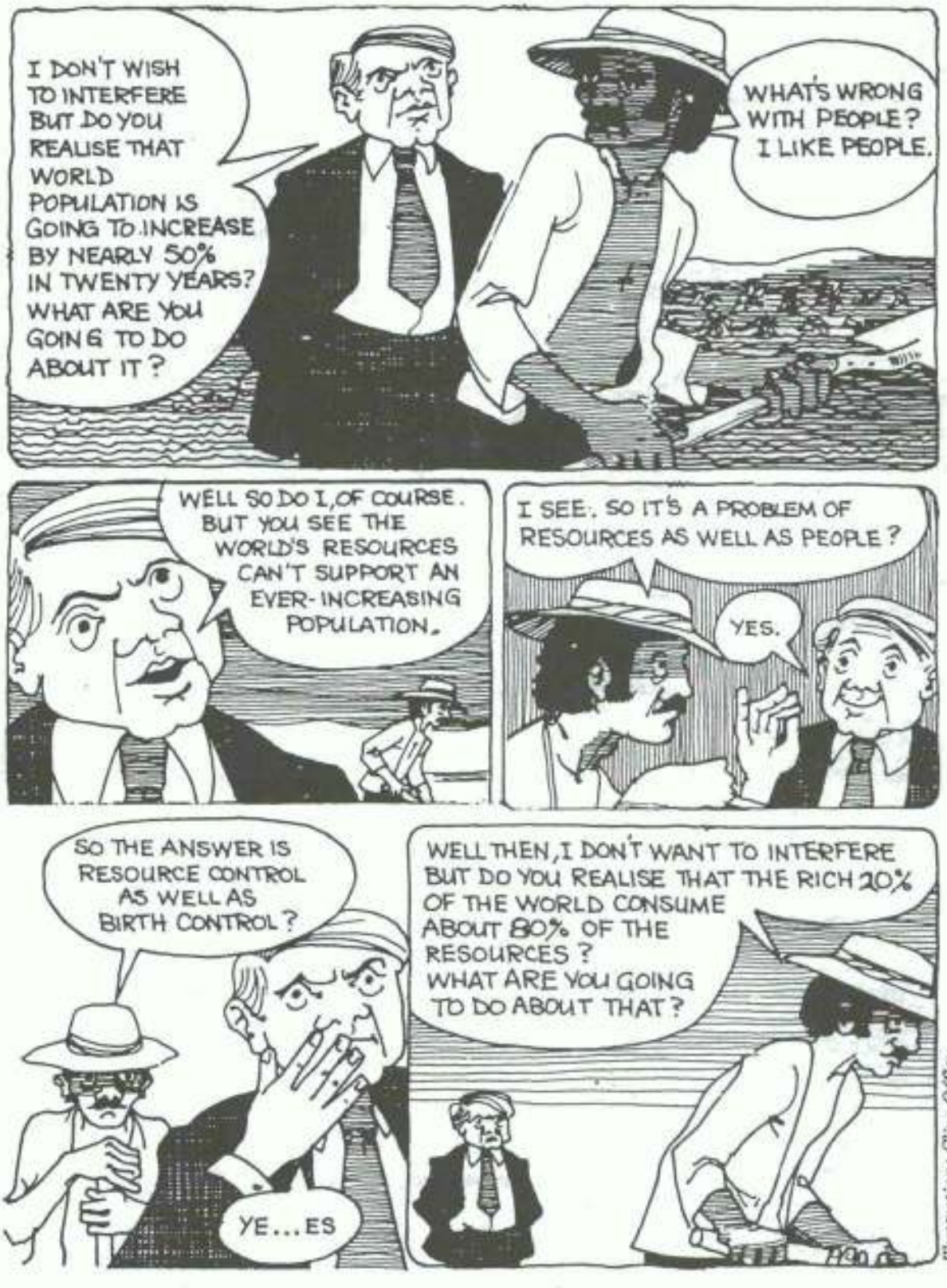


Illustration: Clive Offley

OHT 4

Drought in the Sahel — Quotation

A quotation from a farmer interviewed during the drought in 1974:

> The last three years could not be like those we talked of (earlier). Why? Because at the present time, provided one has the means, one finds something to eat. There was no food in those previous years, and when those who had gone to look for some returned, there were already some deaths in their family. Today people die of hunger only if they do not have the means.

Question: What is the farmer saying about the inevitability of the link between drought and famine?

OHT'S

OHT 5

The Guatemalan peasants who survived the earthquake on 4th February 1976, which killed 22,000 people, injured 74,000 and left over one million of the nation's six million people homeless, do not identify the earthquake as a 'natural' event. They call it a 'classquake'.

Question: What do the Guatemalan people mean by this?

RESOURCE 1

VIEWS ON POPULATION AND HUNGER

1. Next to each statement, tick either TRUE (T), FALSE (F) or NOT SURE (NS).
2. After each statement, write one fact you know which supports your view.

STATEMENT	T	F	NS
1. **Scarcity:** People are hungry because of scarcity, both of food and land.			
FACT:			
2. **Overpopulation:** The world's population is growing rapidly. An exploding population means there is less food for everyone.			
FACT:			
3. **Increased production:** Hunger will be overcome by concentrating on producing more food.			
FACT:			
4. **Large landholders:** To achieve food security the hungry world must rely on large landholders.			
FACT:			
5. **Food versus environment:** We are faced with a tragic trade-off. A needed increase in food production can only come at the expense of the ecological integrity of our food base. Farming must be pushed onto marginal lands at the risk of irreparable erosion. The use of pesticides will have to be increased even if the risks are great.			
FACT:			

	T	F	NS
6. **Export agriculture:** An underdeveloped country's best hope for development is to export crops in which it has a natural advantage and to use the earnings to import food and industrial goods.			

FACT

7. **Rich world versus poor world:** Hunger is a contest with the First World on one side and the Third World on the other. Our standard of living would suffer if we devoted too many of our resources to feed the Third World.

FACT:

8. **Passive peasants:** Landless rural workers are so oppressed, malnourished and conditioned into a state of dependence that they themselves are beyond the point of being able to mobilise themselves.

FACT:

9. **Redistribution:** Hunger can be overcome by redistributing food from areas where there is a surplus to areas where there is a shortage.

FACT:

10. **Foreign aid:** To solve the problem of hunger we must increase our foreign aid.

FACT:

The fight against hunger and poverty grows worse despite the work of more relief agencies than ever before. MICHAEL SIMMONS reports

The world food crisis bites

1

AT THE start of 1983, there are more organisations concerned with world hunger than there have ever been. Yet the number of people dying, or likely to die, from hunger and associated diseases is also higher than ever before – and increasing daily. And the gap between the well-fed and the underfed is growing alarmingly. There is little real prospect, on present trends, of it ever being closed.

In Britain every self-respecting High Street now has its Oxfam shop, a style in patronage inconceivable a few years ago. At national level, there has been a slow but steady proliferation of non-government agencies that care about the world's poor and hungry. Elsewhere in the so-called First World the same trends have been discernible.

The Canadian Agriculture Minister, Eugene Whelan, complained recently that there were now at least 20 UN organisations dealing with food questions. There was more and more duplication of work, he said, and there was overlapping, even competition, among the organisations themselves.

At the last council meeting of the biggest of these organisations, the Food and Agriculture Organisation of the UN, the Indian delegate S. P. Mukerji declared: "I have a feeling that while on the one hand we are increasing the number of resolutions, determinations, pious hopes, the number of organisations at the world level, regional level, country level, at the grassroot level nothing much is done. . . ."

2

Yet, the size of the task is almost too big to grasp. On recent Oxfam estimates, 90,000 people die of starvation or under-nourishment every day – more than one a second, or a Falklands death toll every quarter of an hour. One in four of the world's population – equalling the US, the Soviet Union, Eastern *and* Western Europe and a few more besides – are not getting enough to eat to meet normal energy requirements.

The problems are usually most acute in those countries where the population is growing fastest. The average sub-Saharan African is now eating measurably less than he was eating 10 years ago but in a large number of African and Asian countries, where the population may well be going up by as much as 3 or 4 per cent a year (meaning that 10 million today equals about 17.3 million in the year 2000), food production is growing, at most, by 2 per cent a year.

It is a situation where the people of Bangladesh may be reassured that they have had one or two good harvests in recent years but family planning remains a central problem and the world market for their jute has virtually evaporated. Nigerians, who are also very fertile, are spending far more on food than they can afford. And they are only two countries out of more than 30 thought to be in a similar boat. Add to them the millions of refugees, the landless and the otherwise deprived, and the scope of the problem becomes apparent.

At the FAO, they estimate that the world's population in the year 2000 will be well over 6,000 million, and that farm output will therefore *have* to be more than half as high again as it is now. Demand for food and other farm products will double in the Third World – requiring an input, in money terms, of about $10,000 million every year. Today, if they are lucky, they are getting less than half that amount.

3

Meanwhile, the numbers of landless poor and urban unemployed are growing daily – another way of saying that poverty is increasing. Third World governments, seduced (for instance) by multinational companies wanting to promote grand agribusiness schemes and large-scale farming, or by varied pressures to spend more than they would like on defence, cannot give priority to the landless and the hungry. Agriculture and food production ministries are rarely the most important ministries in any government.

The Third World's terms of trade are also deteriorating alarmingly, with overt trends towards protectionism inducing a reaction which is political as much as it is commercial. A ton of tea bought 17 tons of fertiliser ten years ago; today it buys less than half as much. Sugar, coffee, bananas, and a host of other ostensibly life-giving commodities, have gone the same way.

In economic terms, the hungry countries have been deeply affected by the world recession. A reduction in the annual growth rate of the industrial countries of 0.8 per cent will, according to the World Bank, reduce the growth rate of the poorer countries by at least 1.2 per cent. But if population size and growth in relation to the size of the national economy are also taken into account, then the multiplier, which in World Bank terms is only 1.5 to one, leaps staggeringly to nine to one. That is the measure, in statistical terms, of how the poor's development is governed by the rich.

4

At such a scenario of personalities, politics and stark economies, the novelist C. P. Snow would doubtless give a wry smile. Not long before he died, he forecast that the world would be hit by a terrible famine in the Eighties. The rich, he suggested, would sit in their armchairs and watch the hungry and the poor die – on television. Then they would switch off and do nothing. The forecast has a ring of haunting plausibility.

5

The Guardian, 11 January, 1983.

INSTRUCTIONS

Imagine you are the newspaper editor to which the article has been sent for final editing prior to publication. Your task is to complete the five marked spaces. The first four are for sub-headings. The fifth is for a key sentence from the article to focus the attention of the reader on the article's theme.

1. Read the news report and decide where the following four sub-headings should be placed:

   (i) My Television

   (ii) Real Causes of Hunger

   (iii) Good Intentions

   (iv) Size of the Crisis

2. To fill the fifth space, you need to select a couple of phrases or a sentence from the article that will focus the attention of the reader on the theme of the article. You have space for no more than fifteen words. What phrases or sentences from the article would you put in the fifth space? Why?

3. The sentence the real sub-editor chose to fill the fifth space was: 'Oxfam: 90,000 people die of starvation or under-nourishment every day.'

   What do you think was the reasoning behind this choice? Do you think there is a contradiction between the selection of this focus sentence and the theme of the article? Why?

4. What does the author believe is the root cause of the world food crisis? Do you agree? Why?

Source: Fien, J. (1985) *Alternative Approaches to Development*, Longman, Harlow, pp.19-20.

RESOURCE 3

MYTHS: TRUE OR FALSE?

Myths I Thought Were True	Second Opinion	Reasons for Second Opinion

RESOURCE 4

EXPOSING THE MYTHS

Source: Fien, J. (1985) *Alternative Approaches to Development*, Longman, Harlow, pp. 24-25.

For the last several years we have struggled to answer the question 'why hunger?'

Here we want to share the ten myths that have kept us locked into a misunderstanding of the problem as well as the alternative view of the population-food debate that emerged once we began to grasp the issues. Only when this alternative view is accepted will the real causes of hunger be attacked.

Myth one: People are hungry because of scarcity, both of food and land.

Can scarcity seriously be considered the cause of hunger when even in the worst years of famine in the early 1970s there was plenty to go around – enough in grain alone to provide everyone in the world with 3000 to 4000 calories a day, not counting all the beans, root crops, fruits, nuts, vegetables and non-grain-fed meat?

And what of land scarcity?

We looked at the most crowded countries in the world to see if we could find a correlation between population density and hunger. We could not. Bangladesh, for example, has just half the people per cultivated acre that Taiwan has. Yet Taiwan has no starvation while Bangladesh is thought of as the world's worst basketcase. China has twice as many people for each cultivated acre as India. Yet in China people are not hungry.

Finally, when the patterns of what is growing sank in, we simply could no longer subscribe to a 'scarcity' diagnosis of hunger. In Central America and in the Caribbean, where as much as 70 per cent of the children are undernourished, at least half of the agricultural land, and the best land at that, grows crops for export, not food for the local people.

Myth two: There are just too many people in the world. An exploding world population means there is less food for everyone.

If 'too many people' cause hunger, we would expect to find more hungry people in countries with more people per agricultural acre. Yet we could find no such correlation. China, for example, has merely half the cultivated acreage for each person that India has. Yet in only 25 years China has succeeded in eliminating visible malnutrition.

Countries with comparatively large amounts of agricultural land per person have some of the most severe and chronic hunger in the world. While severe hunger is a daily reality for most Bolivians, they live in a country with well over one-half acre of cultivated land per person, significantly more than in France. Brazil has more cultivated acreage per person than the United States. Mexico, where most of the rural

Myth four: To achieve food security the hungry world must rely on large land holders.

We are made to believe that, if we want to eat, we had better rely on the large landowners. Thus governments, international lending agencies and foreign assistance programmes have passed over the small producers, believing that concentrating on the large holders was the quickest road to production gains. A study of 83 countries, revealing that just over 3 per cent of the land holders control about 80 per cent of the farmland, gave us some idea of how many of the world's farmers would be excluded by such a concentration.

Yet a study of Argentina, Brazil, Chile, Colombia, Ecuador and Guatemala found the small famer to be three to fourteen times more productive per acre than the larger farmer. In Thailand plots of one to two hectares yield almost 60 per cent more rice per acre than farms of 35 hectares or more. Other proof that justice for the small farmer increases production comes from the experience of countries in which the re-distribution of land and other basic agricultural resources like water has resulted in rapid growth in agricultural production: Japan, Taiwan, and China stand out.

We need not romanticise small producers. They get more out of the land precisely because they are desperate to survive on the meagre resources allowed to them. Nevertheless, many believe that our food security is enhanced by entrusting production to large agricultural entrepreneurs. Fewer and fewer rural people are left able to grow or to buy adequate food. Given the widening circle of impoverishment, the national market for food stagnates or even shrinks. But as the domestic market stagnates, toward whom do the agricultural entrepreneurs orient their production? Toward high-paying markets - a few strata of urban dwellers and foreign consumers.

Myth five: We are faced with a tragic trade-off. A needed increase in food production can come only at the expense of the ecological integrity of our food base. Farming must be pushed onto marginal lands at the risk of irreparable erosion. The use of pesticides will have to be increased even if the risks are great.

Haiti offers a shocking picture of environmental destruction. The majority of the peasants ravage the

population suffers from undernourishment, has more cultivated land per person than Cuba, where now virtually no-one is underfed.

Rapid population growth often reflects people's need to have many children in an attempt to provide labourers to increase meagre family income, to provide old age security and to compensate for the high infant death rate, the result of inadeq nutrition and health care. Moreover, high birth r reflect the social powerlessness of women which is intensified by poverty.

Neither the size of the country's population nor its growth is today the cause of hunger. Both hunger and rapid population growth are symptoms of the same disease – the insecurity and poverty of the majority result from the monopolising of national productive resources by a few.

Myth three: Hunger will be overcome by concentrating on producing more food.

Diagnosing the cause of hunger as scarcity inevitably leads to the conclusion that greater production in itself will solve the problem. Techniques to boost production have thus been the central thrust of the 'war on hunger' for at least 30 years. Governments, international agencies, and multinational corporations have promoted 'modernisation' – large-scale irrigation, chemical fertilisers, pesticides, machinery and the seeds dependent on such inputs – all to make the land produce more. Such farming practices have been labelled the 'green revolution'.

But when a new agricultural technology enters a system shot through with power inequalities, profits only those who already possess some co bination of land, money, 'credit-worthiness' and political influence. This selectivity alone has excluded most of the world's rural population and all the world's hungry.

Moreover, once agriculture is turned into an investment in which control over basic physical resources promises financial success, a catastrophic chain of events is set into motion. A new class of 'farmers' – moneylenders, military officers, bureaucrats, city-based speculators, and foreign corporations - buy up agricultural land. Competition for land sends land values soaring. For instance, land values have jumped three to five times in the 'green revolution' areas of India. Higher rents force tenants and share croppers into the ranks of the landless, who now make up the majority of the rural population in many countries. With their increased profits, the powerful buy out small landholders gone bankrupt. Fewer and fewer people gain control over more and more food-producing resources.

once-green mountain slopes in a desperate effort to grow food. Has food production for Haitians used up every safely cultivated acre so that only the mountain slopes are left? No. These peasants seeking to farm the fragile slopes can only be seen as exiles from their birthright – some of the world's richest agricultural land. The rich valley lands are in the control of a handful of elites (and their American partners) whose concern is not food but dollars to pay for an imported lifestyle. These fertile lands are thus made to produce largely low-nutrition and feed crops (sugar, coffee, cocoa, alfalfa for cattle) exclusively for export.

Still we found ourselves wondering whether people's legitimate need for food might not require injecting ever more pesticides into our environment. With the urgent need to grow more food, won't we have to accept some level of harm from deadly chemicals?

Nearly half the pesticides in the United States are used not on farmland, but on golf courses, parks and lawns. The United States Environmental Protection Agency (EPA) estimates that 30 years ago American farmers used 50 million pounds of pesticides and lost seven per cent of their crop before harvest. Today, farmers use 12 times more pesticides yet the percentage of the crop lost before harvest has almost doubled.

In underdeveloped countries most pesticides are used for export crops, principally cotton, and to a lesser extent for fruits and vegetables grown under plantation conditions for export. The quantities of pesticides injected into the world's environment therefore have little to do with the hungry's food need.

Myth six: An underdeveloped country's best hope for development is to export crops in which it has a natural advantage and to use the earnings to import food and industrial goods.

Since school geography classes where we were taught to identify a country with a single crop, most of us have come to see an underdeveloped country's concentration on one or two export crops as practically God-ordained. In reality, there is nothing 'natural' about the concentration on a few, largely low-nutrition crops. These crops were chosen by the colonial powers solely on the basis of what would bring the greatest profit in the high-paying markets back home. The same land now made to grow cocoa, coffee, rubber, tea, or sugar, could grow an incredible diversity of nutritious crops – grains, high-protein legumes, vegetables, fruits and root crops.

The success of export agriculture can further undermine the position of most of the rural population. For example, an increase in the world price of a crop can actually mean less income for the plantation worker or peasant producer. For instance, when in 1974 the world price of sugar increased several fold, the real wage of a cane cutter in the Dominican Republic actually fell to less than it was 10 years earlier; a nominal increase in a cane cutter's wage did not compensate for the inflation set off by the sugar boom.

Export-oriented agricultural operations invariably import capital-intensive technologies, such as chemical fertilisers and pesticides, to maximise yields as well as to meet the foreign market's 'beauty standards' and processing specifications. Basing an agricultural system on imported technologies helps ensure that whatever is produced will be exported to pay the import bill – a vicious circle of dependency.

Myth seven: Hunger is a contest between the Rich World and the Poor World.

Terms like 'hungry world' and 'poor world' make us think of uniformly hungry masses. They hide the reality of vertically stratified societies in which hunger afflicts the lower rungs in both so-called developed and underdeveloped countries. Terms like these make hunger into a place – and usually a place over there.

Worse still, the all-inclusiveness of these labels leads us to believe that everyone living in a 'hungry country' has a common interest in eliminating hunger. Thus, we look at an underdeveloped country and assume its government officials represent the hungry majority. We then are tempted to believe that concessions to these governments, eg, lower tariffs on their exports or increased foreign investment, automatically represent progress for the hungry. In fact, the 'progress' may be only for the elites and their partners, multinational corporations.

The hungry in underdeveloped countries and ordinary Europeans and Americans are linked through a common threat: the tightening of control over the most basic human need – food. The very process of increasing concentration of control over land and other productive resources that we have identified as the direct cause of hunger in underdeveloped countries is also going on in our own.

Corporations are busily creating a Global Farm to serve a Global Supermarket, by finding production sites in underdeveloped countries, where land and labour can cost as little as 10 per cent of those in the First World.

Under the banner of food 'interdependence', multinational agribusiness corporations right now are creating a single world agricultural system in which they would exercise integrated control over all stages of production from farm to consumer.

The Global Farm and Supermarket create the type of interdependence no-one needs. 'Interdependence' in a world of extreme power inequalities becomes a smoke-screen for the usurpation of food resources by a few for a few.

Myth eight: Peasants are so oppressed, malnourished and conditioned into a state of dependency that they are beyond the point of being able to mobilise themselves.

Such a view ignores a fundamental reality in every country today. Because of the selective way news is transmitted to us, we are often unaware of the courageous struggle of millions of people everywhere to gain control over food-producing resources rightfully theirs.

So many who question what peasants can do for themselves seem unaware that in countries comprising over 40 per cent of the population of the underdeveloped world, people have, in our lifetimes, freed themselves from hunger through their own efforts. Even during the worst years of the war, the North Vietnamese were improving their agriculture. Yields were going up, and irrigation was extended from 20 per cent of the cultivated area in the mid-fifties to nearly 60 per cent in the mid-sixties. The Chinese people, formerly at the mercy of droughts and floods, have built reservoirs and multiplied their irrigated land through a system based on local self-reliance and local initiative. The Chinese now cultivate one third of all irrigated land in the world. They have doubled their yields of major grains in two decades, despite recurring droughts.

Myth nine: Hunger should be overcome by redistributing food from areas where there is a surplus to areas where there is a shortage.

Over and over again we hear that North America is the world's last remaining breadbasket. Food security is invariably measured in terms of reserves held by the metropolitan countries. We are made to feel the burden of feeding the world is squarely on us. Our over-consumption is tirelessly contrasted with the deprivation elsewhere with the implicit message being that we cause their hunger. No wonder that North Americans and Europeans feel burdened and thus resentful. 'What did we do to cause their hunger?' they ask with justification.

The problem lies in seeing redistribution as the solution to hunger. We have come to a different understanding.

Distribution of food is but a reflection of the control of the resources that produce food. Who controls the land determines who can grow food, what is grown and where it goes. Who can grow: a few or all who need to? What is grown: luxury non-food or basic staples? Where does it go: to the hungry or the world's well-fed?

Thus redistribution programmes like food aid or food stamps will never solve the problem of hunger. Instead we must face up to the real question: how can people everywhere begin to democratise the control of food resources?

Myth ten: To solve the problem of hunger we must increase our foreign aid.

Many people concerned about hunger focus their energies on increasing our government's foreign aid budget. Such a focus may be both narrow and futile. Narrow because direct economic assistance through aid is only a small fraction of the total economic impact of our government on underdeveloped countries.

On another level, focusing on government aid as a solution to hunger may be futile. No official development assistance programme can address the social and economic causes of hunger because it would, of necessity, both threaten the very elites with whom overall policy must maintain relations and jeopardise the interests of corporations. Aware and well-meaning planners frequently tell us how few their options are, given the fact that policy makers choose not to 'rock the boat'. The best they can do, given the political constraints as well as the limitations of time and money, is to assist a small portion of the smaller landholders with the technical aspects of increasing production.

We fear that, by dealing with symptoms and by being limited by money and time to working with a small number of farmers in any one country, aid programmes help create an 'enclave' of prosperous commercial farmers who identify their prosperity with the current economic structure and with the multinational corporations who process and market their products. Instead of igniting a far-reaching movement for fundamental social change in which the poor majority would take part, the new aid programmes, wittingly or not, threaten to co-opt the potential leaders of such a movement into becoming supporters of the status quo. And the status quo for the majority will still be hunger, or as we have seen, increasing hunger.

Thus foreign aid is appropriate only when given to those countries where serious steps are being taken to redistribute control over food-producing resources.

Adapted from F. M. Lappé and J. Collins (1979) *World Hunger: Ten Myths*, Institute for Food and Development Policy, and F. M. Lappé and J. Collins 'Food First' *New Internationalist*, August, 1976.

RESOURCE 5

THE CAUSES OF DROUGHT AND FAMINE IN THE SAHEL

Source: Fien, J. (1986) *Studying Natural Hazards*, Longman, Cheshire, p. 21.

A Even more shocking than the pushing of cash and export crops in the face of declining food production is the fact that all but one Sahelian country actually produced enough grain to feed its total population, even during the worst drought year of 1973.

Most farmers who grow cash crops find themselves without enough money or food reserves to meet their families' needs from one marketing season to the next. In order to survive what they call the 'hungry' season – the months of particularly arduous work right before harvest – they are forced to take out loans in cash or millet at exorbitant interest rates from the local merchants. Local merchants have the grain because they buy it from farmers during harvest time when abundant supply makes for low prices and when farmers must sell to pay their debts and taxes. The merchants sell the hoarded grain during the hungry season at two or three times the price originally paid, and even export it to higher income markets in neighbouring countries.

In such societies where speculation in food is 'normal', hunger and seeming expansion of the desert are the products not of drought but of a parasitic class of money-lenders and grain-hoarding speculators.

B Thus, any analysis of famine that puts the blame on unexpected droughts will never come to grips with the inequalities in power at the root of the problem. Solutions proposed will inevitably be limited to the technical and administrative aspects – irrigation programmes, modern mechanisation, new seed varieties, foreign investment, grain reserve banks, and so on. Such an analysis allows no reflection upon the political and economic arrangements that, far more than low rainfall, are at the root of low productivity and human deprivation. Thus we would be right to replace the term *natural disaster* by the more appropriate term *social* or *political* disaster.

C What happened to a system that was adapted over centuries to deal with periodic drought? First, even before the French conquest in the late nineteenth and early twentieth centuries, the slave trade had taken millions of people in bondage to the New World. Then came the French and years of bloody fighting. Having established a permanent presence, the French looked for ways to make their new subjects pay for the administrative costs of occupation. The French solution to this problem of their own making was to force the peasants to cultivate crops for export, particularly peanuts and cotton.

D Many falsely assume that the Sahelian drought beginning in 1969 was *the* Sahelian drought. But climatologists consider drought to be an 'integral part' of the climate of the region.

By studying the retardation in the growth of tree-rings, scientists have detected that there have been severe droughts several times over the past three centuries and numerous dry spells from time to time. A recent study concluded 'there was no indication of any long continued upward or downward trend in rainfall nor is there any obvious cycle'. Thus the expansion of the desert cannot be attributed to any long-term climatic change.

E Over the centuries the small farmers of the Sahel had developed a profound understanding of their environment. They knew the necessity of letting land lie fallow for up to twenty years and they cultivated a wide variety of crops, each adapted to a different micro-environment and yet together offering nutritional complementarity. In fact, Mali was once known as the bread basket of Africa. It could always be counted upon to trade grain in times of neighbours' needs. The Sahelian pre-colonial custom was to construct small farming and village granaries for storing millet for flour and in some cases for even more years of consumption, knowing full well that small-harvest years should be expected.

F It is embarrassing for those who blame drought and an encroaching desert for famine in the Sahel to explain the vast amounts of agricultural goods sent out of the region, even during the worst years of drought. Ships in the port of Dakar bringing in 'relief' food departed with stores of peanuts, cotton, vegetables and meat. Of the hundreds of millions of dollars worth of agricultural goods the Sahel exported during the drought, over 60 per cent went to consumers in Europe and North America and the rest to the élites in other African countries. Marketing control – and profits – are still by and large in the hands of foreign, primarily French, corporations.

G The techniques of colonialism and their devastating impact on the land and its people are hardly realities only of the past. While the Sahelian countries achieved formal independence in 1960, the successor governments have often outdone the French in forcing export crop production. Taxes that farmers can pay only by producing crops for export have been increased. By 1960, the last year of French rule, the tax had risen to the equivalent of forty kilos of cotton. By 1970, during the drought, the successor governments were forcing each adult peasant to grow at least forty-eight kilos of cotton just to pay taxes.

H Where previously complementary crops such as millet and legumes were rotated, crop after crop of peanuts or cotton were cultivated until the soils were exhausted. To maintain cotton exports for the French, given the resulting decline in cotton yields, farmers were forced to expand the acreage in cotton in part by reducing planting of millet and sorghum.

RESOURCE 6

TEN FOOD FIRST FUNDAMENTALS

A. Every country in the world has the resources necessary for its people to free themselves from hunger.

B. People freeing themselves from hunger and safeguarding the world's agricultural environment are complementary goals.

C. Whoever controls the land controls who eats. If food grown in the First World is to be exported to the Third World, the First World will control who eats what, how much and how often in the Third World. It is land that must be redistributed, not food. Land reform is a necessary path to successful rural development.

D. To balance a country's population and resources, it is urgent to address the root cause of both hunger and high birth rates: the insecurity and poverty that result from the control over basic food resources by too few people.

E. Our role is not to go in and 'set things right', for wherever people are hungry there are already many ordinary, brave men and women working to democratise the control of food-producing resources.

F. Justice and production are complementary goals. The most wasteful and inefficient food system is one controlled by a few in the interests of a few.

G. The appropriate response of First and Second World people to hunger in the Third World is not more or even improved government foreign 'aid'. We must work instead to help remove the obstacles in the way of people's efforts for self-determination, especially those obstacles being built by the penetration of agribusiness corporations.

H. Hunger is only made worse when approached as a technical problem. Hunger can only be overcome by transforming social structures so that the majority directly participate in building a democratic economic system.

I. Export agriculture is not the enemy. But in a society where only a powerful minority control the productive resources, export-oriented agriculture strengthens their grip. To ensure food security, agriculture must become, first and foremost, a way for people to produce their food and livelihood and only secondarily a possible source of foreign exchange.

J. The hungry are our allies, not our enemies nor a perpetual burden. Our food security is not threatened by hungry people but by a system that concentrates economic power in the hands of a powerful minority which profits by the generation of scarcity and the internationalisation of food control.

RESOURCE 7

GLOBAL FOOD CONNECTIONS

Source: The Student Activities are based upon an activity first developed by Ros Hall and published in J. Fien (ed.) (1989) *Living in a Global Environment*, AGTA Inc. and New Internationalist, Brisbane, Ch. 3. The 'Global Food Connections' diagram was first published in the *New Internationalist Calendar*, February 1987.

PARTICIPANT ACTIVITIES

- Explain if and how the diagram headed 'Global Food Connections' either (a) contradicts, or (b) helps explain the Third World perspective on food issues developed in this workshop.
- Examine the student activities listed below. Evaluate the extent to which these activities are suitable for Years 9-10 Geography or Social Science students.
- Explain how (a) the diagram and (b) the student activities could be adapted to make them suitable for another year level and/or subject area.
- Identify any problems that you might face in teaching about global food connections. How would you handle them?

STUDENT ACTIVITIES

1. Study the diagram, 'Global Food Connections'. From when food is first planted to when it arrives on the dinner tables of the world, food goes through many stages and many groups have an influence on what is produced. Use the information in the diagram to answer the following questions about five stages in the global food connection.

   Stage 1: Agribusiness Suppliers

   (a) Name some examples of the companies.

   (b) What do they supply to farmers?

   Stage 2: Farmers (the Producers)

   (c) Name the three types of farmer.

   (d) What happens to the food that each type produces? (Would they eat it or sell it?)

   (e) What problems are each group facing?

   (f) Which of these groups do you think would produce the most food for world markets?

   Stage 3: Agribusiness Middlemen

   (g) What do these people do?

   (h) Who are they linked to?

2. How powerful are the following groups in influencing what food is grown and sold. Score them '1' (most powerful in influencing what is grown and sold) to '5' (least powerful in influencing what is grown and sold). Write the scores in the boxes. Be able to explain why you have scored them where you have.

   - Agribusiness suppliers ☐
   - Large scale western farmers ☐
   - Small scale western farmers ☐
   - Agribusiness middlemen ☐
   - Small food retailers ☐
   - Western consumers ☐
   - Western retailers ☐
   - Third World elites ☐
   - Third World farmers ☐

3. Many products that we currently buy are produced in the Third World on plantations or as cash crops on farmers' land.

   (a) Survey the shelves of your local supermarket to find out how many products come from Third World countries.

   (b) Prepare a series of graphs/maps to show where the various products come from. Describe your results.

   (c) Following the results of your survey, discuss these questions:

   - If we buy cash crop products from Third World countries, who is likely to get most of the money? Who are we likely to be harming?
   - In your opinion, should we buy products from Third World countries? Why?
   - Would some of the products be better to support than others? Why?

   (d) Prepare a report (to another class or to a school assembly) or a poster to explain how our consumption habits affect people in the Third World.

Global food connections

From the field to the shopping basket.
A guide to the main components of the world's food factory.

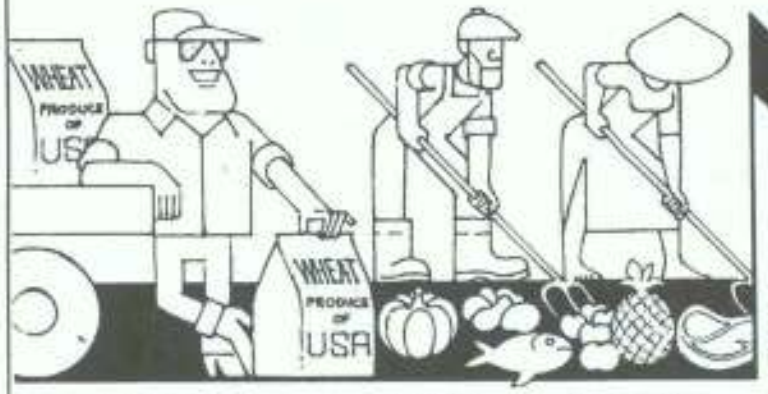


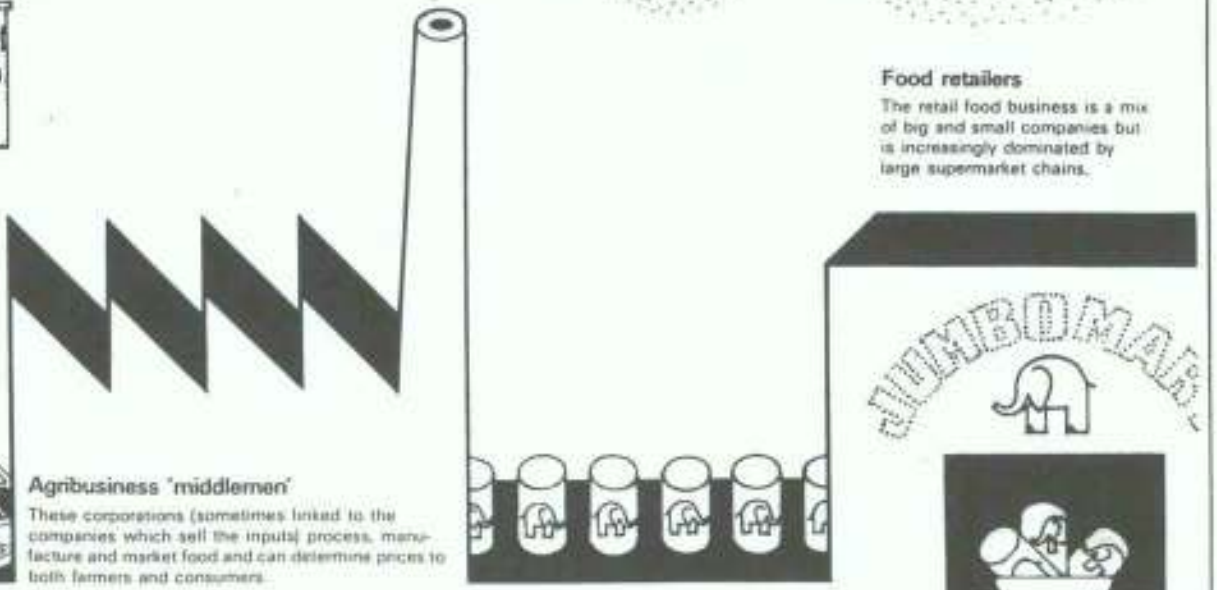
Agribusiness suppliers

These large corporations have tight control over the supply of machinery, chemicals, seed and feed.

Food retailers

The retail food business is a mix of big and small companies but is increasingly dominated by large supermarket chains.





Agribusiness 'middlemen'

These corporations (sometimes linked to the companies which sell the inputs) process, manufacture and market food and can determine prices to both farmers and consumers.

Large-scale Western farmers

They are dependent on big corporations for inputs as well as for processing and marketing produce. Their debt load is increasing and profit margin decreasing.

Small-scale Western farmers

Their production is efficient but increasing costs and low net income mean they are having difficulty surviving.

Third World peasants

They are being cleared from their land for export crops and producing less food for their families.

Third World elites

Large landowners and affluent city dwellers benefit from cash crop exports and low prices imposed on locally-grown foodstuffs.



Consumers

The final stop in the food factory. Like the farmers they have the least power. Food quality, price and availability are determined outside their control.

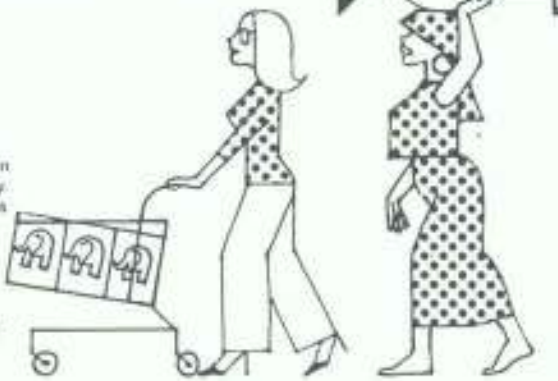


Illustration - Hester Castance

RESOURCES 2

READING 1

THE POLITICAL ECONOMY OF FAMINE

Source: Fien, J. (1986) *Studying Natural Hazards*, Longman, Harlow, pp. 19-20.

Drought followed by famine struck the Sahelian regions of West Africa in 1968-1974 and again in the early 1990s. To what extent were these 'natural disasters'?

Sahel is an Arabic word meaning 'the border' and describes the semi-arid grass and bushland that forms the transition between the Saharan desert environment and the dry savanna environment. Traditionally the pastoralists here, such as the Mali and Fulani tribes, followed an annual pattern of activities controlled by the seasons. During the very long hot dry season, the people herded small groups of cattle, sheep and goats south to the slightly more moist savanna areas. The next season is short and unreliable (up to 400 millimetres of rain, but with a variability of 80 per cent). The people move north with their herds to their homes in the Sahel during this season. There they join their families and the non-nomadic farmers, who traditionally have grown sorghum and millet. The nature of the economy and taxes in the region have forced a decline in food cropping and a marked rise in the production of cotton and groundnuts (peanuts) as cash crops for the export market.

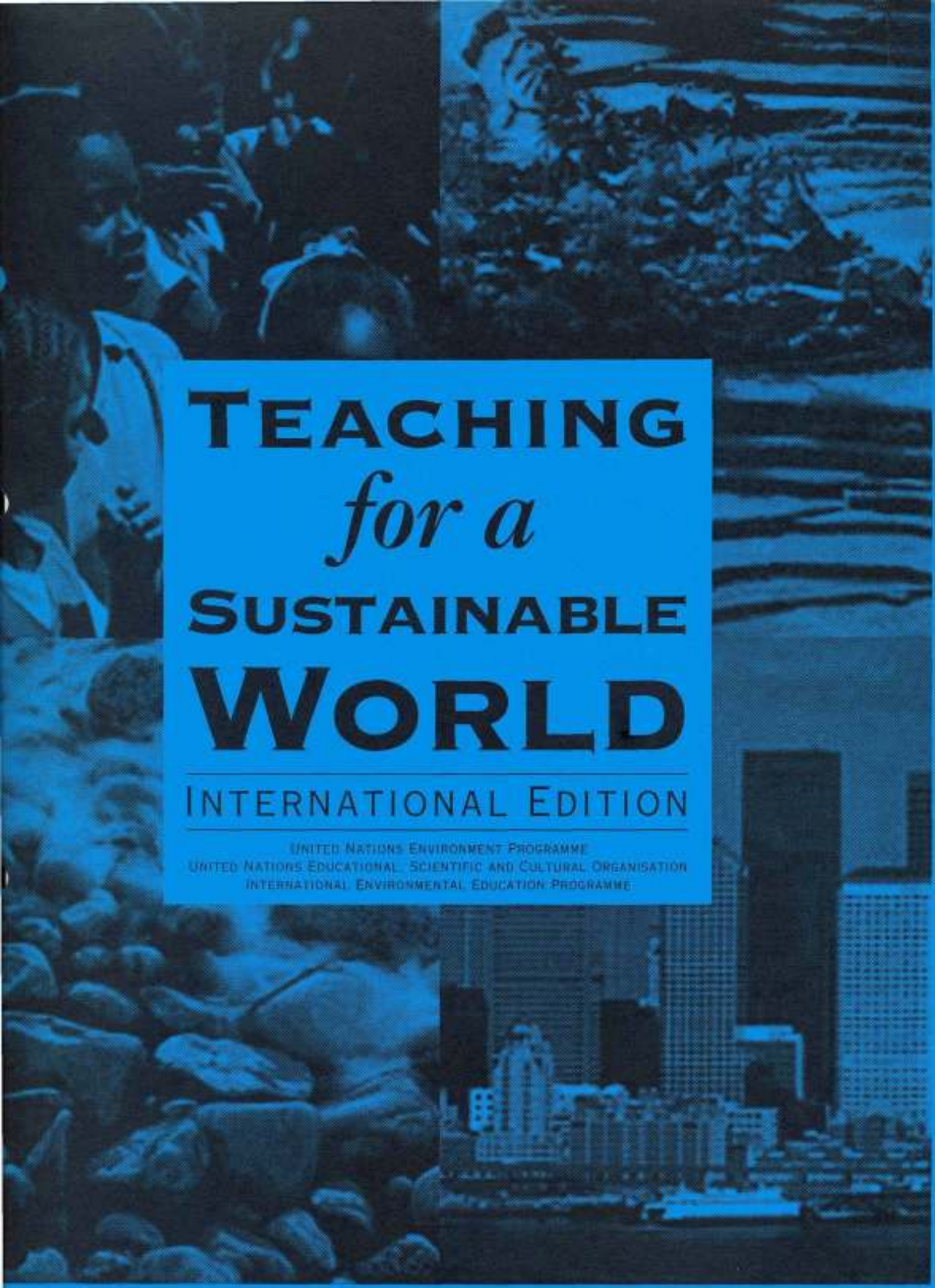
In 1968, a period of eight years with rainfall well below the 300-400 millimetre average began. By 1972, the drought had reached disaster proportions. Large areas reported total crop failures between 1972 and 1974. It was the livestock that went first. The animals were sold when food supplies of millet and sorghum became scarce. Cattle markets were soon glutted, prices fell, and the animals were left to starve. Livestock losses totalled many millions, with an 80 per cent reduction in cattle numbers. With their wells dried and their crops and animals gone, the people migrated south in ever increasing numbers, to the towns and cities where food aid from overseas was available.

Altogether, over 30 million people were affected, with over 150,000 lives lost in the famine; 100,000 dying in 1973 alone. The social costs lingered long after 1974-76 when the rains finally came. Family and tribal groupings have been dispersed and traditional herding has all but disappeared. The growth of shanty towns, urban unemployment, starvation, food relief programmes and a dependence on foreign aid have remained, all causing long-term social and economic destitution.

Yet were these droughts and the famine really 'natural'? The geophysical event of unreliable and low rainfall certainly was. It is a characteristic of all areas that border deserts. But what about crop failures, animal losses and famine? Were these 'natural' and inevitable?

A comment provided by a farmer interviewed during the drought in 1974 provides a clue:

> *The last three years could not be like those we talked of (earlier). Why? Because at the present time, provided one has the means, one finds something to eat. There was no food in those previous years, and when those who had gone to look for some returned, there were already some deaths in their family. Today people die of hunger only if they do not have the means.*



MODULE 19

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP

AusAID

INTRODUCTION

SUSTAINABLE AGRICULTURE *and* RURAL DEVELOPMENT

JO-ANNE FERREIRA
RHODES UNIVERSITY
SOUTH AFRICA

INTRODUCTION

While the quantity of food produced has increased dramatically in the last few decades, many people remain hungry. Furthermore, attempts to increase food production have often resulted in massive degradation of the world's agricultural resource base (eroded soil, salination, the effects of pesticides and fertilisers, etc.). This workshop examines a range of sustainable agriculture practices and contrasts these with conventional farming methods. It also explores the links between these practices and integrated rural development schemes. The activities in the workshop aim to develop key concepts and explore means of promoting sustainable agriculture practices and integrated rural development schemes through participants' work in their communities.

OUTCOMES

Through participation in the activities in this workshop, participants will develop the skills to:

- identify differences between various agricultural methods;
- evaluate the problems inherent in these;
- identify and evaluate the core principles of integrated rural development schemes; and
- plan a strategy for promoting sustainable agriculture and integrated rural development.

WORKSHOP OUTLINE

This workshop consists of activities organised around three themes:

1. Sustainable Agriculture

The introductory activity encourages participants to explore their understanding of the topics to be examined in the workshop and gives an overview of the workshop. This is followed by a mini-lecture which examines the concept of conventional agriculture. Case studies are then used to examine the concept of sustainable agriculture.

2. Rural Development

A case study is used to examine the concept of rural development.

3. Sustainable Agriculture and Rural Development (SARD)

This activity uses a consequence wheel to explore the consequences of the different concepts examined in the workshop. This is followed by an activity in which participants analyse statements about sustainable agriculture and rural development. Participants then develop a set of criteria for promoting SARD. The final activity provides an opportunity for participants to use themes explored in this workshop to plan a lesson which can be incorporated into the syllabuses they teach.

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Overview of Workshop

OHT 2: Conventional Agriculture: Problems

OHT 3: Key Elements of Sustainable Agriculture

OHT 4: Rural Development: Questions

OHT 5: Rural Development: Core Principles

OHT 6: Consequence Wheel

OHT 7: Definitions of Sustainable Agriculture and Rural Development (SARD)

RESOURCES

Resource 1: Sustainable Agriculture Case Studies

Resource 2: Integrated Rural Development Case Study

READING

Reading 1: Farming with Nature: Sustainable Agriculture and Biodiversity

B) TO OBTAIN

Activity 5: Chart or poster paper.

Activity 8: Develop a range of lesson plan headings commonly used by teachers in your area.

ADDITIONAL READING

Auerbach, R. (1994) Sustainable Development: Developing What to Sustain Whom?, *New Ground*, Autumn, pp. 38-41.

Auerbach, R. (1993) Farming with Nature: Sustainable Agriculture and Biodiversity, *New Ground*, Autumn, pp.24-26.

Bell, G. (1992) *The Permaculture Way*, Thorsons Harper Collins, London.

Blake, F. (1987) *Organic Farming and Growing*, The Crowood Press, Swindon, Wiltshire.

Coetzee, H. (1991/2) Sustainable Development: Goodbye to the Good Life, *New Ground*, Summer, pp. 31-33.

Cooper, D. (1990) Sustainable Agriculture, *New Ground*, December 1990, pp.16-17.

F.A.O. (1994) *Development and Education Exchange Papers (DEEP): Sustainable Agriculture and Rural Development: Part 1: Latin America and Asia*, Rome.

Ramphele, M. and McDowell, C. (1991) *Restoring the Land: Environment and Change in Post-Apartheid South Africa*, Panos Publications, London.

Rowley, J. (1993) Bhorletar: The Sustainable Village, *People and the Planet*, 2(4), 14-19.

Reijntjes C., Haverkort, B. and Waters-Bayer, A. (1992) *Farming for the Future: An Introduction to Low-External-Input and Sustainable Agriculture*, Macmillan Press, London.

1. Overview

- Introduce the theme of the workshop - 'Sustainable Agriculture and Rural Development' - and outline the sequence of activities. These are set out on OHT 1.
- Ask participants to write down their understanding of the following terms:
  - conventional agriculture;
  - sustainable agriculture; and
  - integrated rural development.
- Allow a few minutes for writing before asking participants to form pairs to discuss their understanding of these terms.

2. Mini-lecture: Conventional Agriculture

- Use the points outlined on OHT 2 to present a mini-lecture which highlights contemporary problems with conventional agriculture.
- Invite whole group discussion on what the possible solutions might be to these problems.

3. Case Study: Sustainable Agriculture

- Divide participants into groups of four and hand out copies of the case studies on sustainable agriculture (Resource 1) to each group.
- Allocate one case study to each group to review in detail and report back to the whole group. The review should identify the sustainable agriculture principles evident in the case study. These principles should be written on a board or OHT and discussed by the group as a whole during a report back session.
- Use the concepts in Reading 1 to provide information about sustainable agriculture to support the points made in the group reports. OHT 3 summarises key elements of sustainable agriculture.

4. Case Study: Integrated Rural Development

- Hand out copies of Resource 2 which is a case study outlining the development of a sustainable village.
- Allow participants time to read through the article. Using the questions on OHT 4, ask participants to say what they think the core principles of integrated rural development are from this case study.
- Discuss OHT 5 which outlines the core principles of integrated rural development.

5. Consequence Wheel: Exploring The Links

- Divide the participants into three groups. Use OHT 6 to illustrate how the consequence wheels work.
- Ask each group to create a consequence wheel on a large sheet of paper. Each wheel will focus on one of the following:
  - conventional agriculture;

- sustainable agriculture; or
- integrated rural development.

The wheel should explore the social and environmental consequences of each topic. Remind participants that consequences can be both negative and positive.

- Display each group's wheel for the whole group to look at.

6. Group Activity: Definitions

- Display OHT 7 which contains three quotes about sustainable agriculture and rural development.
- Ask participants to discuss these quotes, in small groups. Each group should answer the following questions:
  - Do you agree with these quotations? Why?
  - Do you wish to challenge these quotations? Why?
- Allow each group to present its conclusions and follow this with a group discussion.

7. Criteria for Sustainable Agriculture and Rural Development (SARD)

- Explain to participants that in this activity they are going to identify ten criteria which, if followed, would provide the basis for SARD. These criteria will form a code which can be presented to a range of individuals and groups.
- Ask participants to work in pairs to reflect on earlier activities in order to identify three criteria which will promote SARD.
- Pairs then indicate their three criteria to the whole group. Make a list of these on the display board.
- As a whole group, participants then discuss which ten criteria they would be most happy with. In deciding on a final set of criteria, invite suggestions from participants about which individuals and groups should receive copies of their ten criteria code. Suggest to participants that a suitable follow-up activity would be to deliver the ten criteria to those individuals and groups that have been identified.

8. Curriculum Applications

- Ask participants to select one of the activities in this workshop and adapt it to plan a lesson suitable for a class or subject they teach. Provide participants with a range of suitable lesson plan headings, for example, subject and grade level, lesson topic, place in syllabus, lesson overview, key ideas to be taught, objectives, resources, lesson introduction, steps in lesson, lesson conclusion, lesson timing, self-evaluation strategy.
- The workshop should conclude with a whole group discussion focusing on the question 'Why is a sustainable agriculture and rural development emphasis essential in the curriculum?'

OHT'S

OHT 1

OVERVIEW OF WORKSHOP

This workshop consists of activities organised around three themes:

1. **Sustainable Agriculture**

   Mini-lecture on conventional agriculture

   Case studies on sustainable agriculture

2. **Rural Development**

   Case study on rural development

   Core principles of integrated rural development

3. **Sustainable Agriculture and Rural Development (SARD)**

   Consequence wheel

   Analysis of statements about SARD

   Development of a set of criteria for promoting SARD

   Curriculum applications

OHT 2

CONVENTIONAL AGRICULTURE: PROBLEMS

Source: Cooper, D. (1990) Sustainable Agriculture, *New Ground*, December, pp. 16-17.

- There is widespread famine despite the dramatic increase in food production in the last 45 years (caused by new seed varieties, chemical fertilisers and pesticides, and increased irrigation).
- New, more productive methods have detrimental effects on the environment, for example:
  - **soil erosion** (for every ton of grain produced, approximately 20 tons of topsoil is lost);
  - **the lowering of the water table** (as more crops are planted than the land can sustain and new seed varieties often need large amounts of water);
  - **the salinisation and alkalisation of soils** (through irrigation and removal of trees);
  - **residues of pesticides and herbicides** (found in other living things, food and water supplies).
- Farm subsidies in industrialised nations affect the terms of trade in Third World countries.
- Third World debt leads to the use of land for large scale cash crop production, pushing subsistence farmers onto marginal lands and contributing to widespread soil degradation.
- Deforestation and the advance of desert areas through harmful farming methods.

OHT's

OHT 3

Key Elements of Sustainable Agriculture

Source: Adapted from Coetzee, H. (1991/2) Sustainable Development: Goodbye to the Good Life, *New Ground*, Summer, pp. 31-33.

- Appropriate land use not monoculture
- Working in harmony with natural systems
- Harnessing the powers of nature, for example in pest control
- Soil protection using mulch and minimal tillage methods
- Organic matter build-up through use of manure and compost
- Animals are important for manure and therefore soil fertility
- Plant nutrient maintenance through crop rotation
- No use of artificial fertilisers or chemical pesticides
- Local markets and decentralised systems of distribution
- Biological diversity



OHT 4

- What are the community problems and issues?
- What did the community do to address their problems?
- List the range of strategies or actions used.
- What were the outcomes (positive and negative; short-term and long-term) for the community as a result of the process?
- What are your personal reactions to the community development process illustrated in this case study?

OHT 5

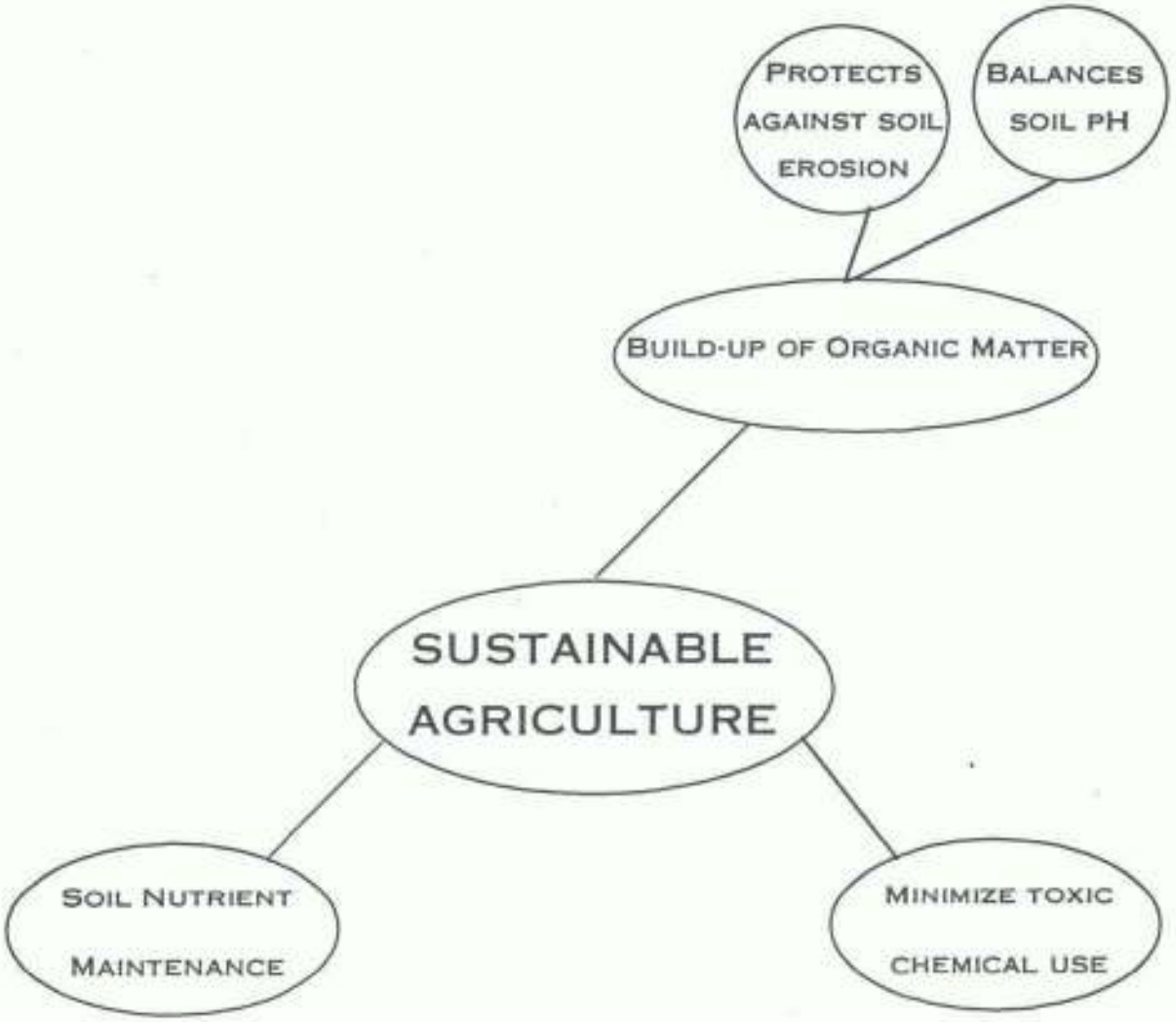
RURAL DEVELOPMENT: CORE PRINCIPLES

- Participatory, collective decision-making and action taking
- Community directed and driven
- Identifies the community's needs, problems, limitations and opportunities
- Prioritising of concerns and actions
- Integrates these concerns and actions into the community development plans in a sustainable way

OHT's

OHT 6

Consequence Wheel



OHT's

OHT 7

Definitions of Sustainable Agriculture and Rural Development (SARD)

Source: FAO (1994) *Development and Education Exchange Papers (DEEP): Sustainable Agriculture and Rural Development: Part 1: Latin America and Asia*, Rome, p. 5.

Agriculture is sustainable when it is ecologically sound, economically viable, socially just, culturally appropriate and based on a holistic scientific approach.

NGO Sustainable Agriculture Treaty (1992).

Low-External-Input and Sustainable Agriculture (LEISA) is agriculture which makes optimal use of locally available natural and human resources (such as soil, water, vegetation, local plants and animals, and human labour, knowledge and skill) and which is economically feasible, ecologically sound, culturally adapted and socially just.

Reijntjes, Haverkort and Waters-Bayer, Farming for the Future (1992).

Sustainable development is the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable.

Document CL 94/6 94th Session of the FAO Council (1988).

RESOURCE 1

SUSTAINABLE AGRICULTURE CASE STUDIES

Source: Adapted from FAO, (1994) *Development and Education Exchange Papers (DEEP): Sustainable Agriculture and Rural Development: Part 1: Latin America and Asia*, Rome, pp. 25-26.

A: Integrated Farming Using Traditional Knowledge in Thailand

Talad is a village of 80 families in Khonken Province, Thailand. Since April 1984 Thongdee Nantha, a monk for 21 years, has been cultivating 1 ha of lowland village land using integrated farming methods. He works the farm with his wife and children and produces more than enough for their needs. He has rice fields, a fish pond and a garden. In the centre of the farm, he raises pigs - a native breed - and rabbits; they are not given artificial feed or supplements but eat grass, weeds and vegetables from the farm. Ducks and chickens provide eggs and meat for the family and some eggs for sale; they eat the weeds from the rice fields, vegetable waste and leftover food. There are seven different varieties of fish. Rice bran, duck and pig manure, and aquatic weeds from the rice fields are food for the fish; insect- and fish-eating fish are kept in a separate pond in the corner.

The main crop is rice, which occupies about two-thirds of the land; one-quarter has the rice-fish combination. The trees on the farm, mostly mango, custard apple, banana and papaya, are grown in the centre around the animals and poultry. On the southern edge of the farm there is a road where neem and nitrogen fixing trees are planted. On the western edge bamboo and mulberries serve as a windbreak. Thongdee grows many kinds of local vegetables, mostly along the dykes around the pond, as well as medicinal herbs. A reed used for roofing material, the *lalang*, is also grown around the pond. Then there are some cotton plants from which thread is spun and cloth woven for use by the family.

Thongdee as a monk is a traditional leader whose farming models are followed by almost half the families of Talad. He was inspired by another monk, Maha Yu Sunthornchai, who has given an example to farmers all over Thailand.

Since 1973, Maha Yu has been practising integrated farming with a combined production cycle of rice, fish, ducks and pigs. This system has remained productive and stable by using the natural cycle of nutrients.

Maha Yu's success in producing his basic needs and marketable surplus from an average-sized farm is based on observation of nature, emphasis on self-reliance and analysis of markets. This technique is not suitable for an absentee landlord or an industrial farmer. For effective integration, every farm procedure, e.g. selection of species and breeds, timing of sowing, mixing of crops and pond design, needs regular and keen observation and analysis. Marketing produce at the right times also optimizes the returns.

Maha Yu Sunthornchai's farm in Surin Province of north-eastern Thailand has inspired many, and today throughout Thailand hundreds of farmers are taking up integrated farming, i.e. a mixture of field crops, fruit crops, vegetables, birds, animals, and aquatic plants and animals that is ecologically sound and economically viable.

Similar farms existed traditionally in many parts of China, India and other South Asian countries in the natural wetlands and high-rainfall (1,500 mm and above) zones until the introduction of pesticides disrupted the rice field ecosystem. Even in areas with lower rainfall, integrated farming or agroforestry systems based on combinations of trees, crops, birds and animals are being tried.

B: Self-sufficiency Close to the City, Santiago de Chile

The Centro de Educacion y Tecnologia (CET) has implemented an agro-ecological production system that guarantees household food security with half a hectare of land. The programme has been established in the Central Valley of Chile a few kilometres north of Santiago. It has two major components: the first is an attempt to maximize production around the home with fruit trees, small stock raising and an intensive vegetable garden covering 800m^2; the second is a production system of 4,200m^2 with six-year crop rotation and grass cover of 50% in summer and 66% in winter. The management criteria emphasize physical and sequential diversification through strict crop rotation and the utilization of mixed cropping and intercropping; the combination of plant and livestock production; and a high level of recycling of plant material and animal waste.

The results in the seventh year of uninterrupted operations show that there are no nitrogen deficiencies in the

crops, the level of available phosphorus has increased from 5 to 15 ppm, there has been a considerable improvement in soil profile and the soil pH has fallen from 8 to between 7.4 and 7.7. Pest infestation is decreasing and soil-borne diseases are practically unknown.

The labour requirement is modest enough that there is no conflict with a full day of off-farm work, yet the system pays over three times the market rate for a day's work. From the economic point of view the system is profitable, as with only 22 hours of work per week a family can earn a net income of US$1,600 per year, which is equivalent to 1.6 times the minimum monthly wage, with additional earnings possible from off-farm work.

The results are more than satisfactory in nutritional terms, as production covers 100% of international nutritional requirements, leaving a surplus after on-farm consumption to cover production costs.

This venture has combined peasant knowledge with the benefits of basic sciences. It shows that a holding can be viable despite a shortage of land and relatively infertile soil. It is noteworthy that the productivity levels of only three of the 17 crops have been below the average obtained by conventional producers in the area.

C: Transition and the Market, San Juan de la Sierra, Chile

An experiment in San Juan de la Sierra, Chile is aimed at disseminating an ecologically and economically viable form of agriculture and strengthening the peasant community, especially its teachers who have to negotiate with the sugar agro-industry (Industria Azucarera Nacional, IANSA), the dairy agro-industry (Sociedad de Productores de Leche, SOPROLE) and the powerful buyers of kidney beans for export. The local peasant production system has production potential and is appropriate for agro-ecological sustainability.

The programme demonstrates the difficulties of moving towards an agro-ecosystem with low external inputs but with a high capacity for internal regulation, in which the biomass and biological interactions have an important role.

The agro-ecological proposal put to these producers by the Centro de Educacion y Tecnologia (CET) has two main components: economic viability and biological sustainability. It is based on diversification and recycling. Production strategies are worked out with the producers' committee; they involve six-year rotations to facilitate land-use and nutrient management and to produce sufficient forage for the winter months. The system is supported by nitrogen and phosphorus fertilizer which is applied in the first year of organic cultivation and thereafter as required.

The transition has taken between three and five years depending on cropping system, quality of soil and type and quantity of agrochemicals previously applied. The farmers' experience shows that mixed systems combining recyclable resources with synthetic mineral nutrients can be used at the start. The gradual transition prevented losses from the change in form of land use.

In the case of sugar beet, organic cultivation with a high dose of nitrogen in the first year produced an output of 99.47 t/ha and the pure organic system reached 110.35 t/ha after five years, against the 111.91 t/ha of a conventional system.

Milk production rose from 3,600 to 7,200 litre/ha in five years, while kidney bean production increased by about 70% from 11 to 18 q/ha.

Programme monitoring revealed that all the peasant farmers in the San Juan de la Sierra watershed need to participate in the CET operation, for if those in the upper reaches use agrochemicals there will be downstream contamination of organically grown crops via the irrigation water. This was proven by the detection of diazinon residues on organic holdings of five years' standing at levels similar to those on conventional holdings.

Producer income has clearly risen, leading to an important capitalization process, particularly in technologies that facilitate the agricultural work. Although these producers would be subject to a fall in agricultural profitability, their competitive position is strengthened because of their low operating costs and high productivity.

RESOURCE 2

INTEGRATED RURAL DEVELOPMENT CASE STUDY

Source: Adapted from Rowley, J. (1993) Bhorletar: The Sustainable Village, *People and the Planet*, 2(4), 14-19.

Bhorletar, Nepal: The Sustainable Village

Bhorletar is a rapidly growing settlement of some 150 houses which is run by an elected Village Development Committee (VDC). The village centre is growing fast, with 35 new houses built in the last year - 20 of them by newcomers to the area. Without any town planning, the results are beginning to show in terms of pollution of the village canal, uncollected garbage and poor sanitation.

In many respects it is a typical Nepali village. Land is scarce, yet most of the villagers depend on farming. Roughly half the village land is cultivable but there is less than half a hectare for each of the 3,000 people living there.

The task of drawing up environmental plans for Bhorletar began in 1990. A system of 'participatory rural appraisal' was used to collect information about every aspect of village farming and life. This included drawing up detailed land use maps. A local teacher was trained to carry out these activities, working with the local steering committee and the community as a whole. With the help of two non-government organizations and the IUCN planning team, the village began by preparing a profile of itself.

A local geography teacher took the lead in writing up the village profile, which then went through various revisions. It includes details such as the number of springs, forest patches, tree species, landslides, cropping patterns and hazard-prone areas. The profile highlighted a number of problems: rapid depletion of forest resources because of increasing population and encroachment on the forest; a lack of latrines now made essential because of population growth; flooding and erosion in the river valley; domestic animal diseases; a lack of clean drinking water and a problem of increasing numbers of landless immigrants.

Finally, an environmental plan based on this profile was defined by the villagers themselves, and approved in meetings with the local District Council and representative from the various line agencies of the central government.

The village selected its own activities for priority action and drew up a series of recommended solutions. These included community forest conservation; improved fuelwood stoves; new latrines; protective dams and afforestation to stop flooding; raising ducks to control snails; improved roads, vegetable gardens and marketing; and a new health post. Top priority for immediate action was given to clean drinking water, to be provided by a system of gravity fed pipes and taps alongside a system of long-term community maintenance, watershed protection, toilet building, fruit tree planting and vegetable growing to take advantage of the convenient supplies of water. All the villagers helped in building and laying of the pipeline which feeds 22 taps. This includes one extra tap for the primary school for which the parents provided all the materials. Rules have been agreed for using the various taps (some being kept only for drinking water).

Such community planning shows the potential for self-help development in the villages of Nepal. Bhorletar's experience has proved that local communities can plan and carry out their own development programmes and that given the authority and skill, villagers can plan their resource use system and carry out plans far more effectively than the usual top-down government processes.

READING 1

FARMING WITH NATURE: SUSTAINABLE AGRICULTURE AND BIODIVERSITY

Source: Adapted from Auberbach, R. (1993) Farming with Nature: Sustainable Agriculture and Biodiversity, *New Ground*, Autumn 1993, pp.24-26.

Sustainable development. Biodiversity. Sustainable agriculture. Permaculture: recently these four concepts have become buzzwords. They are symptomatic of a growing together of concerned rural development workers and the environment and conservation movements, but they are often used in a whole range of documents to try to legitimise the illegitimate.

Economic Development

After the second world war, the focus was on economic growth using technology developed by scientists to increase productivity while reducing labour requirements. In agriculture 'green revolution technology' successfully reduced labour inputs and increased yields where rainfall was adequate but required large amounts of expensive energy-intensive inputs such as nitrogen fertiliser. Wherever it was applied in the developing world green revolution technology transformed society as well as production, leading to increasing inequalities as farmers able to afford the inputs prospered at the expense of those who could not. Eventually, recognition of the importance of reaching the more vulnerable people and helping them access resources led to the introduction of concepts such as 'growth with redistribution' and the 'basic needs approach' in the 'sixties and 'seventies.

As Niels Roling, a Dutch extension specialist points out, this matched a shift in extension philosophy from 'Doing To' (Technology transfer: we are the experts) to 'Doing For' (Diffusion of innovations: we have the expertise). More recently, there have been attempts to 'Do With' (Participatory Rural Appraisal: let us join our expertise with yours). This latest shift comes at a time when problems of environmental degradation have become so serious that they can no longer be ignored, and it is realised that the future of human life on Earth is in question.

Those involved in development are recognising that unless resources can be used in a way that 'does not compromise the ability of future generations to meet their needs', development will not be sustainable in the long term. Sustainable development, it is argued, will have to encourage growth in such a way that the knowledge of local people is used as the starting point for any development, and resources are given a value which takes a long term view of the environment.

Sustainable Agriculture

For agriculture to be sustainable, four key areas have to be considered. Firstly, correct land use is essential; ploughing steep areas or planting unsuitable crops is clearly folly, even in the short term. Secondly, a long term approach to soil fertility is needed. Pietermaritzburg's 'tree man' Robert Mazibuko sums this up by saying, 'Don't feed your plants, feed the soil'. A third aspect involves reducing the use of fertilisers and other chemicals. Although third world agriculture is very different to first world agriculture, the problems caused by high levels of inputs are just as serious, both in terms of financial dependency and in environmental terms. Finally, we come to biological diversity; if arable agriculture in Africa continues to be based on mono-cropped maize, then environmental degradation will continue no matter what production systems are used.

In a temperate European climate where the soil is moist for most of the year, the process of humus formation is naturally encouraged. In such a climate, one can get away with ploughing every year, as the soil's organic matter is converted to humus without major losses. Here in Africa, however, it is a different story. Our thin topsoil cannot manufacture large quantities of humus, and what little organic matter there is, is rapidly oxidised by the hot sun. Forming humus in our climate requires careful attention to creating the right micro-climate.

The underlying principle here is to keep the soil covered at all times. This can be done by use of mulch, by planting trees together with crops, or by mixing crops in such a way that the soil is covered by plants for most of the year.

Permaculture

The permaculture system of agriculture applies these principles to agricultural design by finding which plants naturally like to grow together. Some of these 'plant guilds' are known to traditional farmers; an example is the practice of planting maize with beans and *ibhece* (melons).

New guilds can be developed by trial and error, or by developing an understanding of the principles of plant succession, and the cultural requirements of plants which thrive in your area.

Plants can either be grown together at the same time or rotated by planting different crops one after another in the same area so that the demands and benefits of each type of plant can contribute to nutrient cycling and the development of soil fertility. A natural way of designing guilds takes the micro-climates provided by trees into account, using the tree as a support framework for creepers, and planting shade-loving plants under the tree, plants requiring moisture around the drip line, and sun loving plants out in the open, where they still enjoy the benefit of a wind break. Moisture is harvested and conserved as much as possible, using the three principles of water management: slow down, spread and sink. The farm is treated as a system which must be planned to meet the requirements of each activity with the products of some other activity so that all products are useful to the system, either directly or as products for barter or sale.

Westerners are stuck with the idea of straight lines of a single crop in a single field. Perhaps a change is in the wind. The emergence of 'Chaos theory' in physics has revolutionised scientific thinking, leading New York Times Science Editor, James Gleick, to observe that disorder in nature has always been a vexing problem for science because biological processes simply do not obey linear laws. Gleick (and the growing band of scientists who are working on applications of Chaos theory) argue that only by discovering how to apply non-linear thinking to biological problems will we understand how natural systems work.

Diversity and Stability

This is probably more true in agriculture than in any other branch of natural science. Ecologists have recognised that increasing diversity brings about increased stability in biological systems. If a system is subjected to a shock or stress such as a drought, flood or fire, the greater the variety of species in that system, the more likely it is that the system will survive.

Modern production agriculture relies on about 30 species of plants and only five animal species for 90% of our food. Animal parasites and plant pests and diseases, subjected to a barrage of poisons over the past 50 years, have shown an amazing resilience in developing resistance to the ever more toxic chemicals used to enable man to maintain a tenuous control over food production. Once again, we are stuck in the linear mode: seeds need soft soil with no weeds and no pests or diseases. Plough the soil, plant fast-growing, high yielding varieties, pump in as much fertiliser as we can, kill off any problems that may arise.

Instead of this resulting in well-regulated agricultural production, we find ourselves sinking into a quagmire of surpluses and shortages, of more and more chemicals and fertilisers, and ever increasing risk for the farmer and society, faced with the prospect of poison in the food chain and in our own food, polluted air and water, and the risk that super-resistant pests and diseases could develop as we use more and more antibiotics in medicine, and similar chemicals in agriculture.

To develop sustainable farming systems, we need to learn from the patterning of nature, and relearn the art of farming, rather than the science (or technology) of production. We need to follow the contours of ridge and valley, leading water in such a way that it can be as much use as possible to us before we allow it to leave our farm. The farm must be designed around the needs of those who live on it, and each tree, plant, building or animal must be built into the system so that it is efficient and sustainable, even in difficult circumstances such as drought.

Specialisation and Efficiency

One of the major arguments against diversified farms is that they are too labour intensive: the effort of milking one cow is not very different from the effort of milking two or ten cows, the argument goes, so why don't we milk 300 cows and not bother with pigs, chickens, crops or vegetables. If we specialise, we only need one set of equipment, and we can become experts in dairy farming.

The argument sounds plausible, but the result is a series of unbalanced enterprises. In Holland, for example, there are so many cattle that the manure has become a major pollutant, contributing 80% of Holland's acid rain through evaporating nitrogen compounds. Large-scale specialisation of this sort creates huge environmental imbalances and enormous mountains of surplus dairy produce because the balance of animals which could be maintained on healthy pastures has been upset. Aah, but we need all those cows to eat the mountains of grain produced by the huge inputs of fertilisers, and we must have the fertilisers to stimulate industry to create jobs for all the people who are out of work because of the mechanisation of agriculture!

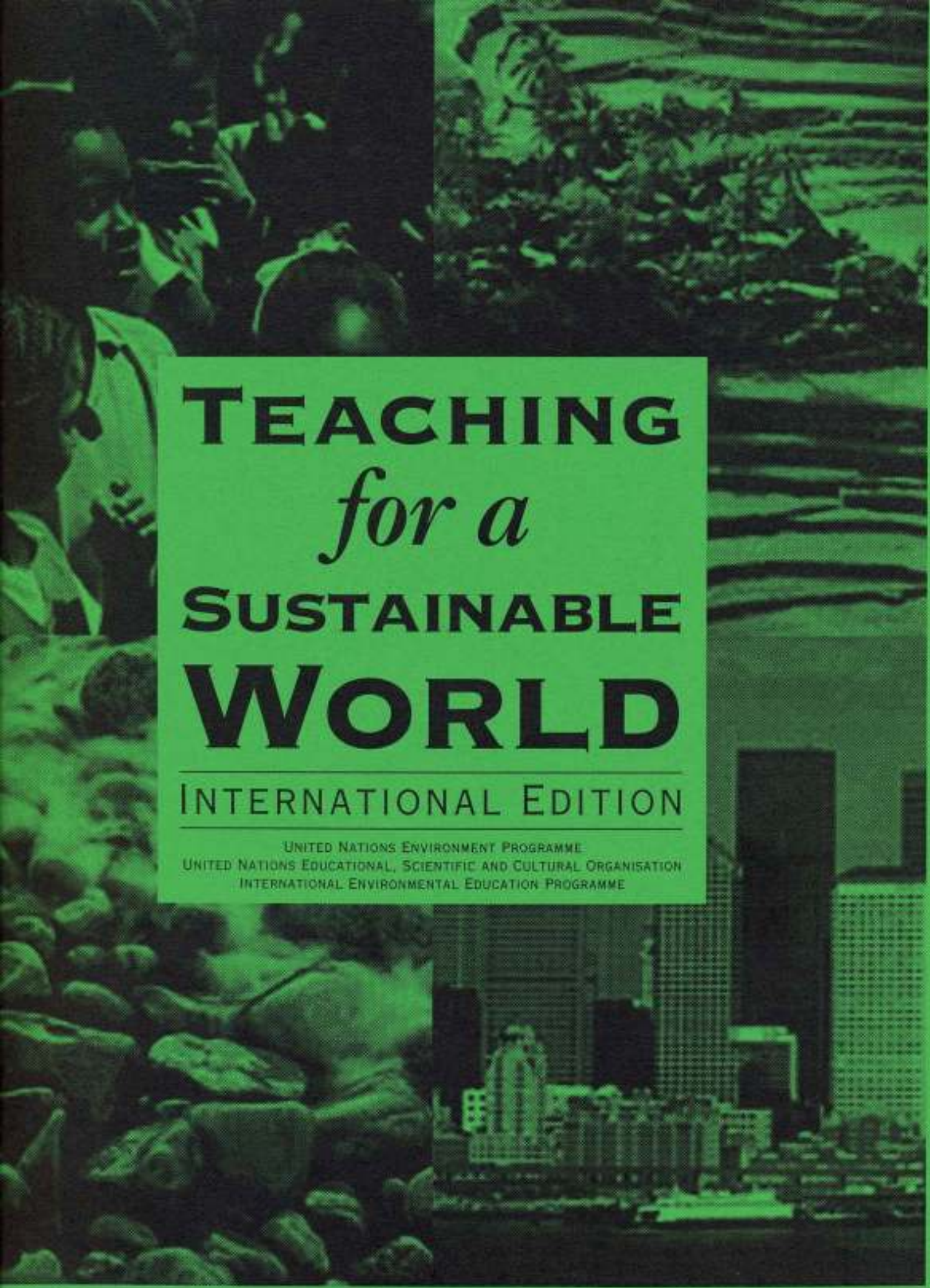
Is the solution then a return to some form of 'noble' subsistence agriculture? Not at all, mechanisation has an important part to play in reducing the back breaking

drudgery of agriculture. Equally, technology such as plant-breeding for high yield and for disease resistance can contribute (and has contributed) to the well-being of millions of farmers. But if we are to develop sound technology, we need to be cautious about destroying the wonderful variety of plant types on this planet, because once they are gone, we will not be able to find out what they could have been used for.

The more we can build agricultural systems which include a variety of strange and little-known plants, the more stable will our farming systems become; plants which will grow only in a certain environment can help farmers in that environment to establish a market niche, specialising in those crops or animals which thrive especially well in a given environment. At the same time, the market economy is here to stay and it would be irresponsible to suggest that farmers should abandon tried and tested crops and production systems entirely.

However, the challenges of adapting our systems to make them more stable, sacrificing a small amount of apparent short term profit for the advantages of long term stability and sustainability, makes good sense in any language.

If any one of the four principles of sustainable agriculture outlined (correct land use, feeding the soil not the plant, reducing the use of chemicals and encouraging biological diversity) can be regarded as the most crucial, then surely it is biological diversity. Simply substituting manure for fertiliser will not make agriculture sustainable; only when the diversity of a system has been built up by the introduction of a range of species, which together cycle nutrients effectively, form appropriate microclimates, conserve moisture and build an environment conducive to life, will agriculture be truly sustainable. Anyone flying over South Africa today will be forced to conclude that we have a long way to go.



MODULE 20

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID
AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT
AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC.
GRIFFITH UNIVERSITY

TRAVELLER *or* TOURIST

ROB GILBERT
JAMES COOK UNIVERSITY
AUSTRALIA

INTRODUCTION

This workshop raises questions about the impact of tourism on the developing world, one of the most important and fastest growing sources of income and employment for many developing countries. In 1960, international tourist arrivals amounted to 25.3 million; in 1990, they had risen to 425 million, 17 times the earlier figure. As such, tourism is a major and growing resource, but, like so many forms of development, it is also potentially very damaging in a variety of ways: environmental degradation, economic dependence, cultural imperialism, and social disarray can all result from unwise tourist development.

The topic of tourism and development has great potential for development education. First, while tourists are predominantly from the wealthier countries of the world, tourism and travel is nonetheless an increasingly widespread experience for people in many countries. So studying the impact of tourism on development has direct implications for the way visitors think about and conduct themselves in travel to other places. It provides useful opportunities to develop understanding of economic, social and cultural differences. Becoming understanding 'travellers' rather than simply 'tourists' can have real benefits if it leads people to assess how they behave when travelling and how they relate to people from other cultures.

Second, increased world tourism means that there should be no shortage of people and resources on this topic. Visitors can give first hand accounts of the developing world; people from developing countries can give a different perspective on the impact of tourism; and tourist promotion agencies and literature allow the study of the public image of tourism to the overseas consumer. All these provide an opportunity for close study of the tourist industry and experience.

Third, tourism is a major growth industry worldwide, and its positive and negative effects are evident everywhere. This means that the study of tourism in the developing world can be related to the students' experience of tourism wherever they live, and in many cases responses to issues can be compared with similar issues in students' own locations. This comparison can provide a bridge between people in many countries, with great potential for empathy and understanding.

Finally, tourism has been closely linked to cultural and economic imperialism. For instance, the hotel market is dominated by American multinationals like Holiday Inn, Best Western and Sheraton. In 1991, eight of the top ten tourist hotel chains were American, one was British and one French. Also, tourism has brought certain images and experiences of the developing world to members of colonising nations, and these need to be critically examined by all involved. As a result, the study and teaching of tourism and development offers opportunities to developing nations to inform the rest of the world about their own histories, cultures and environments, how they should be understood, and how they can be protected.

OUTCOMES

This workshop aims to increase participants' understanding of the operation of tourism and development, its impacts on life in developing countries, and implications for change at the personal and policy levels, and the educational implications of these issues. Specifically, the unit aims to promote:

- knowledge of the nature and significance of tourism in developing countries;
- understanding of the benefits and problems for people of various forms of tourism, especially in terms of quality of life, social justice, welfare and the environment;
- a critical awareness of the political economy of tourism in the developing world and aspects which need to be changed to protect the welfare of people and environmental quality; and
- a personal commitment to promoting tourist activity which will maximise rather than detract from the welfare of people and environmental quality around the world.

WORKSHOP OUTLINE

The workshop will comprise the following elements:

1. Focus Activity: Images of Developing Countries

This is a group discussion activity to raise major issues and focus on the chief aims of the workshop. Based on analysing typical descriptions of tourist attractions in three Asian countries, the workshop will raise questions about the image of these countries in the tourist industry, the popular forms of tourist activity, and the economic and other impacts of tourism on these countries.

The aim is to show how tourist operators create and market tourist destinations by constructing particular images of places and people. Consumers respond to the images created, thus setting up a demand which the people in the destinations then feel they must provide. In this way, the nature of tourist development is significantly affected by the images created about the desirable aspects of a place.

Note that three descriptions are provided with the activity. If possible, actual copies of tourist brochures would be preferable, since illustrations are an important part of the image presented, and the particular images emphasised may vary from country to country. A useful exercise may be to compare the images created of a particular destination in advertising aimed at markets in different countries.

2. The Consequences of Tourist Development

This workshop/discussion activity aims to raise problematic issues of tourist development by asking participants to make judgements about some of its consequences. In classifying consequences as favourable, unfavourable and neutral, participants

should become aware of the complexities of the issues and the various perspectives from which they can be judged. In particular, the discussion should acknowledge the competing ethical, economic, social and environmental considerations in judging any tourist development.

At this stage students should not be pressed to draw firm conclusions. The aim is to open the issues up to critical scrutiny.

3. Case Studies in Tourist Development

This activity is an analysis of a series of case studies of the impact of tourism on selected developing countries, including Fiji, Sri Lanka, and Nepal. The workshop focuses on the positive and negative effects of tourism in these areas, and policy options available to promote socially just and environmentally sustainable solutions to problems. The resources for this activity require extensive reading and could be distributed earlier for pre-reading.

4. Being an Enlightened Traveller

This section will raise the issue of tourism in developing countries from the perspective of the foreign tourist. It will review alternative tourist roles and suggested codes of behaviour for tourists to developing countries.

It will also consider the implications of the 'enlightened traveller' idea by asking participants to construct an advertisement for a tourist visit to their own localities. The advertisement will aim to promote the kind of tourist experience recommended by the previous sections of the workshop.

5. Being a Discerning Host

This section considers how people who host tourists in countries which are tourist destinations (which of course includes all countries) should respond to the problems of tourism. It asks how they might take steps to ensure that the tourists who visit their localities will experience the pleasures and personal enrichment which travel can offer, while minimising the potentially harmful effects of tourism. A typology of different kinds of tourists is used to raise discussion of these issues.

6. Discussion

This concluding section reviews the previous activities and their implications for school curricula and teaching, identifying teaching activities relevant to the topic, and discussing problematic issues which could arise in teaching about tourism in the developing world.

MATERIALS REQUIRED

Overhead Transparency Master

OHT 1: Being an Enlightened Traveller

Resources

Resource 1: Tourist Images of Asia: Singapore

Resource 2: Tourist Images of Asia: Thailand

Resource 3: Tourist Images of Asia: Bali

Resource 4: The Pros and Cons of Tourist Development

Resource 5: Case Studies in Tourist Development

Resource 6: Case Studies of Tourist Development 1: Sri Lanka

Resource 7: Case Studies of Tourist Development 2: Nepal

Resource 8: Case Studies of Tourist Development 3: Fiji

Resource 9: Being an Enlightened Traveller

Resource 10: Being a Discerning Host

READING

For a valuable overview, the books by Harrison, Lea and Mason and the issues of the magazine *New Internationalist* (December 1984 and July 1993) are useful sources of information, concepts and illustrations.

ADDITIONAL READING

Butler, R. (1991) Tourism, Environment and Sustainable Development, *Environmental Conservation*, 18(3), 201 - 209.

Conscious (various issues).

Gamble, W. (1989) *Tourism and Development in Africa*, John Murray, London.

Harrison, D. (ed.) (1992) *Tourism and the Less Developed Countries*, Bellhaven Press, London.

Hayward, S., Gomez, V. and Sterrer, W. (1981) *Bermuda's Delicate Balance*, Bermuda National Trust, Nassau.

King, V. (ed.) (1994) *Tourism in Borneo: Issues and Perspectives*, Borneo Research Council, Williamsburg, VA.

Lea, J. (1988) *Tourism and Development in the Third World*, Routledge, London.

Mason, P. (1992) *Tourism: Environment and Development Perspectives*, World Wide Fund for Nature, Godalming.

New Internationalist (especially December 1984 and July 1993)

Purdie, H. and O'Connor, D. (1990) *Tourism: The Total Picture*, Jacaranda, Milton.

ACTIVITIES

1. FOCUS ACTIVITY: TOURIST IMAGES OF ASIA

This exercise is aimed mainly at establishing the link between the consumer (or potential consumer) of tourism and the development of tourism in the host countries. The argument is that knowing about tourism has a personal significance, as our views of desirable tourist activities can influence tourist development.

Tourist destinations are products constructed for consumption. They are constructed in two ways: first, as images to appeal to the consumer, and second, as actual sites for buildings, services, work and the everyday activities of people living in these areas. These two constructions are related, but the image is not a simple reflection of the existing tangible reality. Tourist operators construct images based in part on the existing resources of the destination but they tailor the image to what they think consumers want. In addition, this desired image becomes the model for the construction of physical facilities and the kinds of services, activities and work which goes on. Thus, the image in a sense is then constructing the reality.

This exercise tries to capture some of these ideas. It is based upon the 'touristic' descriptions of Singapore, Thailand and Bali in Resources 1-3, respectively. Note that actual tourist brochures would be a preferable basis for discussion, but that the descriptions provided would be quite adequate.

- Divide participants into small groups and give each group a copy of either Resource 1, Resource 2 or Resource 3. Ask the groups to read the statements and answer the questions at the end.
- After 20 minutes, conduct a general discussion of group answers, focusing especially on the concept of images and the construction of reality in the third set of questions explored by each group.

2. THE PROS AND CONS OF TOURIST DEVELOPMENT

This session considers general issues which will arise in the following activities. It is based on a workshop activity in which participants classify as 'beneficial', 'problematic' or 'neutral' the series of statements about the relationship between tourism and development in Resource 4.

The aim is to engage the group in thinking about the complexity of the potential effects of tourism, and the criteria which might be used to judge them.

The group leader should be prepared to elaborate the points where necessary with information from the literature. The points are taken largely from the references listed by Gamble, Lea, Purdie and O'Connor, and *New Internationalist*.

The discussion should raise specific issues about the nature of tourist development, but also more fundamental issues about development itself and notions of human welfare and environmental quality.

3. CASE STUDIES IN TOURIST DEVELOPMENT

This is a major activity which considers issues in particular tourism areas: Sri Lanka (Resource 6), Nepal (Resource 7) and Fiji (Resource 8). These case studies are intended to introduce concrete evidence on which analysis and discussion can be based.

The activity requires a considerable amount of reading. Participants can be asked to read one or all three of the case studies. While the three cases together give a useful range of information, there may not be time to read them all. It may be desirable to allocate and distribute this reading before the workshop.

- After the chosen reading task is completed and participants are directed into appropriate work groups, give each group a copy of the discussion questions on Resource 5.
- Allow 30 minutes for group work on these questions.
- Groups then present a short report on their findings.
- To conclude the activity, ask participants to discuss:
  - Is it ethical to travel to a place where the 12 principles on Resource 5 are not followed?
  - What travel alternatives are there?

4. Being a Traveller Rather Than a Tourist

This activity raises issues of how tourists to developing countries should conduct themselves — how to be a traveller rather than a tourist. It looks at the personal implications of the earlier activities and how visitors can act in such a way as to minimise the harmful impact of tourism.

The distinction is between the *traveller* who visits in order to learn and experience the cultures and environments of the places visited, and the *tourist* who visits to be entertained by images and experiences created especially for the tourist market. The argument is that being a traveller is a more productive approach for all concerned.

- Use OHT 1 to explore the qualities of an enlightened traveller.
- Distribute Resource 9 and ask participants to complete the questions on it in pairs. The questions explore the idea of the enlightened traveller and ask participants to use the concept to reflect on their own practice and to apply it to ideas of travel in their own area.

5. Being a Discerning Host

The purpose of this activity is to have participants consider how host countries and people see the advantages and disadvantages of different kinds of tourism and tourists. It provides lists of different kinds of tourist activity and tourists, and asks participants to consider how detrimental they might be to the environment and host cultures.

- Distribute Resource 10 and ask participants to consider the kinds of tourism and tourist presented.
- Ask participants to answer the questions provided.

6. Conclusion: Curriculum Implications

The purpose of this concluding activity is to encourage participants to consider how they might incorporate the themes from this workshop into their teaching. This could include one or more or the following activities:

- Work in small groups to brainstorm the plan for a teaching unit on 'responsible travelling'.
- Adapt/translate/simplify the readings in the resource sheets used in this workshop for pupils of different languages and reading levels.
- Compile a list of audiovisual resources to complement the case studies used in this workshop.
- Design a 'diamond ranking' exercise based upon the principles for enlightened travellers on Resource 9/OHT 1.
- Review relevant classroom resources such as those listed in the Additional Reading section.

OHT 1

BEING AN ENLIGHTENED TRAVELLER

Must tourism have negative effects on the environment and people of host countries? Can it be organised to support the historical, cultural and natural heritage of an area? The World Tourism Organisation argues that with care and proper policies the cultural and natural heritage of an area can be protected. One requirement is that tourists themselves act in ways which will sustain rather than damage host cultures and environments.

Suggestions from One World Travel, a sustainable tourism agency, include the following guide to travellers who respect the places they visit:

- If possible, stay with local people or in modest accommodation which does not require the expensive resource-consuming style of international hotels.
- Drink and eat local food so that more of the expenditure stays in the country.
- Get around on foot or by bicycle or local transport rather than tourist coach.
- Avoid off-road tours which could damage soil and other aspects of the natural environment.
- Don't litter.
- Prepare for your trip by learning about the culture, history and customs of the people.
- Try to learn some of the language of the place you are to visit.
- Respect and try to fit in with local customs.
- Be sensitive to the intrusion of photographing people and places.
- Do not dress in ways which might offend local beliefs, especially in places of religious or spiritual significance.
- Be careful that in bargaining you are not exploiting the poverty and need of sellers.
- Respect the rights of people, especially when you are in the powerful position of being relatively wealthy.
- Avoid relationships, especially sexual ones, that are not based on equality of respect.
- Talk to local people about their country and their views of tourists.
- Think about the impact of tourism on the places and people you visit.

RESOURCE 1

TOURIST IMAGES OF ASIA: SINGAPORE

We can learn a lot about tourist development by looking at the images through which destinations are marketed. The following descriptions of a tourist destination in Asia are typical of those produced for the tourism market. In reading the material, consider what it shows about the image of Asia as a tourist destination.

Fantastic Shopping!

Few places on earth have shopping as good as Singapore. Bursting with exotic treasure and futuristic gadgets, Singapore is like an enormous bazaar where you can buy anything from cameras to Persian carpets, Thai silk to European designer fashions. For a mind-blowing experience try the huge department stores with their famous brands from all over the world. Orchard Road is full of them, while the stores on the East Coast such as City Plaza tend to be less busy and often a little cheaper. Shop till you drop on our special shopping tour - tremendous value and fun!

Delicious Food!

Food is great fun in Singapore. Indulge your passion for Oriental dishes such as the famous Peking Duck. Sample superb Malaysian gado-gado or subtle flavours of India in a range of delicious dishes. There are sushi bars for fans of Japanese food and restaurants serving every type of Western cuisine from Russian caviar to American hamburgers. And like the food, the variety of restaurants seems endless - everything from five-star to outdoor street stalls. The smell of Asian foods cooking, the bright neon lights and the constant bustle are invigorating. Or why not enjoy our 'Eastern Dinner Cruise' for the romantic evening with a difference - an experience you will treasure forever.

Captivating Atmosphere!

In the cultural districts of Singapore you can mix shopping with sightseeing. Stroll down Serangoon Road (Little India) where the sights and smells of India fill the air. Visit the streets of Chinatown and see how life was in old Singapore. And don't forget Arab Street in the Muslim district. Overflowing with batik, basketware, jewellery and perfumes, it's full of charm and atmosphere. For garden lovers the Botanic Gardens offer a peaceful retreat while in Jurong, both the Chinese Garden with its pagodas and weeping willows and the Japanese Garden of Tranquillity with its fine teahouse offer hours of distraction away from the busy city. These and other attractions can be enjoyed on our island tours including 'City Experience' and 'East Coast Highlights'.

Islands of Fun!

Singapore's offshore islands offer great attractions. Visit Kusa (Turtle) Island with its sacred Chinese temple and survey the wonderful views across the harbour to Singapore. Or see Sentosa on our 'Home of Tranquillity' tour. Once a military base, it's now a pleasure resort where you can get round on the open-air monorail that lazily snakes its way to most of the island's attractions ... and no end of surprises!

In Singapore the surprises never seem to end. There is history a plenty for devotees of the past on our 'In Raffles' Footsteps' tour. There are temples heavy with incense, discos to bop in, golf courses to play on, race meetings to bet on and of course there is the unexpected - the discoveries unique to every traveller who steps out in dynamic Singapore.

QUESTIONS

1. The Description

- What aspects of the places are highlighted?
- What have the writers assumed the tourists want?
- What kind of person is this implied tourist?
- How successfully does the material stimulate your interest? How does it do this?
- Are there things you might want to do in these places which are not mentioned? If so, why are they omitted?

2. Images

- What is the dominant image of the place? Is it a narrow stereotype or does it reflect the variety of life in these destinations?
- What images of the people are presented? How well would they recognise themselves in the material?
- Does the image in any way enhance or demean their standing as people?

3. The Effect of Images

- How would this image feed back into the construction of the environment and life in these places?
- What kind of environment would the realisation of the images create?
- What problems might arise from the construction of it?
- What impact would the provision of these images have on the life and work of the people?

RESOURCE 2

TOURIST IMAGES OF ASIA: THAILAND

We can learn a lot about tourist development by looking at the images through which destinations are marketed. The following descriptions of a tourist destination in Asia are typical of those produced for the tourism market. In reading the material, consider what it shows about the image of Asia as a tourist destination.

Bangkok - The City of Angels

Bangkok beautifully illustrates Thailand's contrasts. Surrounded by the roar of the city, saffron robed monks meditate peacefully in temple courtyards. At night the temple spires on the Chao Phya River glisten in floodlight while the streets flash with neon. Parts of the city offer a night-life of dubious reputation. Bars, discos, cabarets and the ubiquitous 'massage parlours' all vie for attention. Only a short distance away, graceful dancers will entertain you with a centuries-old repertoire.

It appears that everything is on sale everywhere - from high-rise department stores to market stalls, pavement sellers to sampans plying their trade on the canals that thread the city. The beautiful Thai silk for sale is genuine but the $15 'Rolex' watch is not. In Bangkok the contrasts and contradictions of Thai life are brought home to the traveller in vivid colour. Our outstanding tours will introduce you to the city and its surrounding attractions. Tours to the city's temples and Grand Palace, to the floating markets, the delightful Rose Garden Resort and the infamous River Kwai.

The Beautiful North

North from Bangkok you can experience the legendary beauty of the mountains, where Thailand's fascinating hill tribes live out their ancient cultures. Due to their isolation, these people have kept their customs, dialects and dances. Dotted with mist-covered mountain ranges, this is also an area to go trekking and literally get off the beaten track. Chiang Mai and Chiang Rai offer fine accommodation from which to tour the area.

Thailand's Romantic Islands

If tropical islands are your thing then head for idyllic Phuket. This picturesque island is rapidly becoming one of Thailand's most popular destinations. Imagine enjoying the cool breezes off the Andaman Sea as you relax with a cool drink after a heavy day of swimming, sunbaking and beach massages. Or setting off for the day to nearby Pee Pee or Phang Nga islands.

Alternatively you can dine at the beach-front restaurants on the delightful island of Koh Samui across the peninsula in the Gulf of Siam. These islands, with their mix of perfect beaches, charming people and first class accommodation, are natural settings for restful, romantic holidays.

What's Cooking?

Western style menus are common in the tourist areas and international hotels, but while you're in Thailand you mustn't miss the local cuisine. Building on the traditions of India and China, Thailand has blended a unique style. In the south the speciality is seafood whilst in the north sticky rice dishes are staple dishes. However be warned. Thai curries can be excruciatingly hot to the Western palate, though, if you avoid the fiery sauces, you will be rewarded with a varied and subtle style of cooking that uses the freshest of ingredients.

Games People Play

If you enjoy a game of golf, a tennis work-out or a flutter on the horses, you will be delighted by a trip to Thailand. Watersport enthusiasts will find excellent facilities at the seaside resort of Pattaya or the islands of Phuket and Koh Samui. Thailand's golf courses are numerous - there are ten 18-hole courses in Bangkok alone; and you can enjoy a day at the races at the Royal Bangkok Sports Club or the Royal Turf Club. Be a little adventurous and see a bout of Thai boxing. Essentially a martial art but also a spectator sport, Thai boxing is a brutal but fascinating spectacle. Hands, elbows, shoulders, feet and knees are used to the accompaniment of traditional music. Sword fighting is another form of self defence that has, due to its high degree of concentration and skill, become an entertaining spectator sport.

Festivals for All Occasions

Thailand's festivals and celebrations are usually very noisy and always extremely friendly. The Thai New Year is celebrated with religious pilgrimages, beauty parades, dancing and good-natured water throwing. The celebrations continue throughout the year and for the King's birthday in December the whole city is decorated in his honour. If you enjoy colour and spectacle then try to time your visit to coincide with one of these intoxicating and memorable celebrations.

QUESTIONS

1. The Description

- What aspects of the places are highlighted?
- What have the writers assumed the tourists want?
- What kind of person is this implied tourist?
- How successfully does the material stimulate your interest? How does it do this?
- Are there things you might want to do in these places which are not mentioned? If so, why are they omitted?

2. Images

- What is the dominant image of the place? Is it a narrow stereotype or does it reflect the variety of life in these destinations?
- What images of the people are presented? How well would they recognise themselves in the material?
- Does the image in any way enhance or demean their standing as people?

3. The Effect of Images

- How would this image feed back into the construction of the environment and life in these places?
- What kind of environment would the realisation of the images create?
- What problems might arise from the construction of it?
- What impact would the provision of these images have on the life and work of the people?

RESOURCE 3

TOURIST IMAGES OF ASIA: BALI

We can learn a lot about tourist development by looking at the images through which destinations are marketed. The following descriptions of a tourist destination in Asia are typical of those produced for the tourism market. In reading the material, consider what it shows about the image of Asia as a tourist destination.

Bali on the Beach

On Bali's popular beaches you can be as active or as idle as you wish. Cold drinks, soothing massages and tropical fruits are at your fingertips thanks to the ever friendly beach vendors. You can take to the water on a surfboard, a sailboard or hop on a local prahu for a sailing adventure with a difference. You can indulge your passion for skin and scuba diving on the island's reefs , or just play in the waves and comb the coral reefs for colourful shells.

On the Road

Jump in a bemo or a hire car, and you're off through a fanfare of lush vegetation spilling onto the roads. Banana and Pepper trees, frangipanis and coconut palms all in a hurry of wild growth. Take the road into Denpasar for lunch. Here, vendors pushing their two-wheeled carts wander the streets with all kinds of incredible edibles - spicy soups, exotic fruits, coconut icecream, roasted nuts. On the roadside, embers crackle and glow beneath the skewered pieces of meat. Satay is everyone's favourite, and special fried rice, noodles and gado-gado with delicious peanut sauce is a treat not to be missed.

Into the Hills

Head up into the hills for the art of Bali: paintings in Ubud, Mas for wooden and sandstone carvings, Celuk for silver. Young boys merrily work away on mysterious deities and magical garudas. Enigmatic demons with fang-like teeth cast wild looks with bulging eyes. A cassette player pumps the rhythmic beat of popular western culture while nearby smouldering incense drifts from an altar where an offering sprinkled with holy water pays homage to the Hindu deities and divine spirits. And while you are there, no trip to Bali would be complete without a visit to the Monkey Forest at Sangeh. Experience the beauty of the temple and meet the resident monkeys who have made the sacred forest their home.

QUESTIONS

1. The Description

- What aspects of the places are highlighted?
- What have the writers assumed the tourists want?
- What kind of person is this implied tourist?
- How successfully does the material stimulate your interest? How does it do this?
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RESOURCE 4

THE PROS AND CONS OF TOURIST DEVELOPMENT

This activity is an opportunity to think about issues related to tourist development. In particular, it tries to show that tourist development is not an unequivocal benefit for host countries, since, like any form of development, there are benefits but also problems which result from it.

In addition, in deciding whether a certain point is a benefit or not, we must use criteria which will reveal values about development. Therefore, the activity is aimed at identifying values by which tourist development might be judged also.

- For each of the points listed, decide whether it is: a benefit, (B) a problem (P), both a benefit and a problem (B/P), or a neutral (N) effect. Circle your answer in each case.
- It might be useful to consider the list individually at first, and then compare and discuss your decisions in a group.
- A concluding task would be to develop a number of generalisations about the impacts of tourism.

1.	International tourists bring foreign currency into the host country. Tourism is a major export for many Third World countries.	B	P	B/P	N
2.	Package holidays have become a major form of international tourism.	B	P	B/P	N
3.	In 1970 the World Tourism Organisation was established as a UN affiliate. It aims at 'the promotion and development of tourism with a view to contributing to economic development, international understanding, peace, prosperity and universal respect for and observance of human rights and fundamental freedoms for all, without distinction as to race, sex, language and religion.'	B	P	B/P	N
4.	Entertainments based on traditional culture are often presented for tourists at international hotels.	B	P	B/P	N
5.	Some governments in developing countries offer investment incentives to tourist developers and operators. These may include tax incentives, speeding up import licences and land purchase and approvals, guaranteeing labour availability and pay rates.	B	P	B/P	N
6.	The tourist industry generates costs for the host country, including infrastructure (roads, power, water, etc.), interest on loans, profits to overseas operators, building and maintenance, and imports used in tourist operations. Some forms of tourism have greater import demands than others (e.g. international hotels compared with guest house accommodation).	B	P	B/P	N
7.	Tourist spending is multiplied as it passes through various parts of the economy, though because of import effects the multiplier in Third World countries is less than in the developed world.	B	P	B/P	N
8.	Tourist tastes (e.g. for clothing, consumer goods, and even values) are often taken up by local inhabitants in what is called the demonstration effect.	B	P	B/P	N
9.	Tourism increases the demand for agricultural produce and local crafts.	B	P	B/P	N
10.	Tourist development can diversify the economies of countries that may have previously been reliant on primary or extractive industries, which are subject to the fluctuation and, in some cases, the general decline of commodity prices.	B	P	B/P	N
11.	Tourist development is less dependent on high technology and its returns in terms of profits and employment are more immediate than many other forms of development.	B	P	B/P	N
12.	Tourism is labour-intensive.	B	P	B/P	N
13.	Tourist development is usually very concentrated in a few small areas. Typically, it leads to particularly strong growth in capital cities.	B	P	B/P	N
14.	Tourist employment is often seasonal, and direct employment in hotels and the like is mainly for the young and unskilled.	B	P	B/P	N

RESOURCE 5

CASE STUDIES IN TOURIST DEVEOPMENT

- Read one of the case studies on tourist development in Sri Lanka (Resource 6), Nepal (Resource 7) or Fiji (Resource 8).
- Identify the deleterious effects of tourism in the location chosen.
- The following list contains suggestions from groups in developing countries about desirable policies to minimise the harmful effects of tourism.
  - Consider the suggestions and identify any which you think would address the particular problems you identified in the case studies.
  - Are there other suggestions you could make to help solve these problems?
  - What barriers might there be to implementing the suggestions?

SUGGESTIONS FOR TOURISM POLICY IN DEVELOPING COUNTRIES

1. Hotels should be required to install effluent treatment plants.
2. No more agricultural land should be given over to tourism.
3. Development projects should be required by law to include local representatives on planning teams.
4. Tourism infrastructure development should be compatible with the needs and practices of local communities.
5. Labour intensive practices using locally available resources should be promoted, and minimum levels of local employment and resources should be required by law.
6. Legislation should regulate the imported content of tourism.
7. Minimum wage levels approved by independent labour unions should be required of all tourism activities.
8. Planning controls should ensure regional dispersal of tourism development to avoid over-concentration and regional inequality.
9. Levies on the tourist industry should be established to fund the teaching and development of traditional skills and art forms.
10. Codes of conduct should be formulated and distributed at tourist outlets.
11. Local employment should be provided at all levels, including managerial.
12. Environmental safeguards and representation of local people should be rigidly applied in the development approval process.

RESOURCE 6

CASE STUDIES IN TOURIST DEVELOPMENT 1: SRI LANKA

Source: Adapted from Mendis, E.D. (1981) *The Economic, Social and Cultural Impact of Tourism on Sri Lanka*, Christian Workers' Fellowship, Colombo.

Sri Lanka looks upon international tourism as a solution to foreign exchange problems. In the 1970s, the official gross foreign exchange receipts from tourism grew annually by 56.2%. However, tourist-earnings expressed in Lankan rupees is misleading, since, during the decade, the rupee was considerably devalued. The real value of tourist earnings grew by 36.4%. Today tourism occupies the fourth place as a foreign exchange earner ranking after tea, rubber and petroleum products.

In arriving at the net foreign exchange earnings, deductions have to be made from gross earnings for the foreign exchange costs of servicing tourism. These costs may be broadly classified as operating and capital costs.

Operating costs include imported food, beverages, tobacco, fuel, expenditure abroad on advertising, publicity, and sales promotion; commissions paid to travel agents and tour operators abroad, maintenance costs of tourist offices abroad, servicing of foreign debts, management fees paid to foreign organisations, foreign travel of locals engaged in the tourist industry; payments to foreign consultants, architects and interior decorators, outflows of funds on account of interest, dividends, and capital repatriation on foreign investments in tourism.

Capital costs include costs of infrastructure, hotel accommodation and transport. Infrastructure development brings with it the foreign exchange costs of providing roads, railways, seaports, airports, electricity, water service, telecommunications, sewage disposal, etc. Hotel accommodation requires the foreign exchange costs of constructing hotels, motels, restaurants, rest houses; and purchasing lifts, air-conditioning plants, furniture and fittings, kitchen equipment, bathroom fittings, electrical equipment, crockery, cutlery, linen, etc. Transport equipment generates the foreign exchange cost of purchasing planes and helicopters, tourist buses, limousines and railway coaches.

As a result, the net foreign exchange earnings from tourism are only some 59% of gross.

The tourist industry generates a variety of employment opportunities in diverse fields. Direct employment in the servicing sectors include jobs in hotels and restaurants - receptionists, waiters, room-boys, cooks, laundrymen, gardeners, maintenance staff, store-keepers, clerks - and jobs in travel agencies, tourist shops, sports and recreational establishments. Indirect employment is created in the supplying sectors like handicrafts, jewellery, batiks, curios and souvenirs, food and beverages.

The figures indicate that 20% of the employees in the hotel industry are hired on a temporary basis. These casual workers are employed on a 'contract' basis or a daily wage-rate. They often get only a percentage of the service-charge paid to permanent employees and they join the ranks of the unemployed for half the year. This is a standard feature of hotel employment.

There is a heavy demand for jobs in hotels and restaurants, which account for about two-thirds of the total employment in the tourist industry. Hotel jobs are rewarding not because of the salaries and wages, which are relatively low, but on account of the service-charge, tips and occasional gifts given by tourists. This makes hotel jobs glamorous and attractive and draws even upper middle-class recruits to service jobs that would be considered 'menial' or low prestige, servant-type jobs in Sri Lanka's traditional social system.

In the larger hotels it is quite common for unskilled and semi-skilled workers like gardeners, bell-boys, taxi drivers and kitchen-hands to earn a four-figure income especially during the high season. This helps to promote egalitarianism by undermining class differences based on income. However, when uneducated, unskilled labourers earn higher incomes than skilled and qualified professionals, then the entire system of rewards and incentives for work within the country is called into question.

Tourism contributes to National Income (GDP) directly through tourist expenditure and indirectly through the operation of the 'multiplier effect'. Although tourism's contribution to the GDP is quite small, the growth rate has been very strong.

However, the multiplier effect itself and its use in assessing the impact of tourism in developing countries, has been criticised. The multiplier effect does work favourably in developed countries, but in countries like Sri Lanka where resources are scarce and even some essential commodities are imported, the multiplier effect is slight and leads to a transfer of resources from needier sectors of the economy.

Tourism can help in dispersing economic development in regional areas. In Sri Lanka, where most of the non-agricultural production is confined to the Western Province and about 90% of the industrial production is concentrated in and around Colombo, the growth of tourism can help to diminish regional inequalities in development.

The relationship between tourism and local economies is problematic. For instance, in the case of tourist hotels, their output is irrelevant to the surrounding village economies, since it is absorbed by the foreign tourists and the local affluent elite. The only potential links are the inputs of labour and materials which the hotels must purchase from surrounding villages if the rural economies are to benefit. But this does not happen. As for labour, hotels prefer to employ English-speaking recruits from Colombo schools rather than Sinhala and Tamil-speaking youths from village schools. As for materials, village produce such as vegetables, fruits, fish and eggs are purchased by hotel suppliers and wholesalers who stand between the hotels and the producers and earn high profits. This point, combined with the small size of production units and the seasonality of the industry, means that the claim that dormant villages are led to greater economic prosperity by the regional effects of tourism is largely a myth.

Tourism development involves the provision of infrastructure facilities, goods and services, which mean the provision of food, beverages, lodging, transport and recreation for visitors. This can mean the diversion of much needed scarce resources from people's needs to visitors' consumption. This transfer of resources takes place in a wide range of economic activity associated with tourism. Some examples are:

- Food - Lobsters, crabs, prawns, fish, meat, eggs, vegetables, etc. are available for tourists, but not for local people.
- Water - It is estimated that the average consumption per tourist is more than 10 times that of a Colombo resident.
- Building Materials - Used lavishly for hotel-construction, these are scarce for house-construction.
- Transport - Ceylon Transport Board buses are badly overcrowded while tourist buses and coaches go half-empty.
- Electricity - One small hotel has more electric lights than an entire village in many areas.
- Land - Taken up by hotel complexes especially in beach-resorts, denying access to traditional economic pursuits like fishing. In areas like Hikkaduwa and Beruwala local fishermen have been edged out.

Local commentators have argued that Sri Lanka has been subsidising the low-cost holidays of the affluent industrial countries. From 1967 onwards, the exchange rate moved progressively in favour of tourists, with a four-fold drop against the US dollar from 1967 to 1980. The depreciation of the rupee makes holidays in Sri Lanka cheaper for foreigners while making foreign travel and stays abroad exorbitant for Sri Lankans themselves. This makes it easy for a lower-middle-class foreigner to enjoy a first-class holiday in Sri Lanka, while making it difficult for a rich Sri Lankan to have a third-class holiday abroad.

Sri Lanka promotes tourism by making it cheap for visitors through the exchange-rate and profitable for investors through fiscal incentives. The subsidies and concessions given to the tourist industry include a 5-year tax holiday on construction and operation of tourist hotels, with a tax rate reduced by 50% for 15 years after the 5-year tax holiday, lump-sum depreciation and development rebates by way of capital allowances, investment relief, and income tax exemptions granted to foreign experts and executives and on profits arising to foreign contractors from the construction of tourist hotels.

Sri Lanka is advertised as the 'pearl of the Indian Ocean', and a 'charming tropical paradise with beautiful natural scenery'. What sells best and hence what is pushed hardest is the exotic imagery. The artificial image projected by the tourist industry contrasts sharply with the harsh reality of a poor Third World country struggling along the path of development.

As E. D. Mendis of the Christian Workers' Fellowship writes:

> *In a sense, we are compelled to create these tourist enclaves since we are obliged to fulfil the expectations of our visitors who come here to sample a taste of paradise. We must make it possible for them to enjoy the sun and the sea and if we do not insulate them from the stark miseries of our country, they may be nauseated or conscience-stricken, and not visit us again. Hence the strenuous efforts at window-dressing, camouflaging the squalor, and sweeping the dirt under the carpet, take the form of rounding up beggars, keeping the cities clean, and planting colourful flowers on our roundabouts. We cover up the sores with bright raiment and present to our visitors a cheerful, smiling Lanka who in reality is nothing but a sick and anaemic lady with a painted face.*

RESOURCE 7

CASE STUDIES IN TOURIST DEVELOPMENT 2: NEPAL

Source: Adapted from Stevens, S. (1988) Tourism and Development in Nepal, *Kroeber Anthropological Society Papers*, Nos. 67-68.

The Himalayas have long been a tourist destination, sought out by pilgrims and hermits to whom the mountains were sacred ground. Moghul emperors of the early seventeenth century sought paradise in the Kashmir hills during the hot season, and their British conquerors continued that tradition. Since Indian independence, these hill stations have seen growing Indian tourism by an increasing Indian middle class.

In addition, relatively low cost jet travel to South Asia and an increasing interest by Europeans and Americans in ethnic and environmental tourism, along with a continuing depiction of the Himalaya as 'Shangri-la' in books, magazines, films and travel advertisements, have led to mass tourism in places such as Kashmir, Nepal, Bhutan and Sikkim. Nepal is the one most actively encouraging tourism, and, as a result, experiencing its benefits and disappointments.

By all international standards of comparison, Nepal is one of the very poorest and least developed nations in the world. It is 90% agricultural but food production lags behind population growth. Its systems of land tenure produce widespread inequality in ownership, tenancy and indebtedness. Life expectancy and adult literacy are very low; less than 10% of the people have access to electricity, and a similar proportion have safe drinking water. Over 50% of Nepal's population is considered to be living in absolute poverty in the early 1980s.

Amidst such dismal development results, tourism has emerged as one of the few encouraging sectors of the Nepalese economy, and has become Nepal's number one source of foreign exchange.

Government policies played an important part in this growth: by loosening visa policies; opening of previously restricted mountain areas to trekking; developing a national park system; investing in the creation and improvement of an international airport; loans for hotel and restaurant development; and the permitting of gambling in a Kathmandu international hotel.

Evaluating the impact of tourism is made more difficult by the unavailability of basic information on foreign investment in Nepalese hotels and trekking agencies or on government subsidisation policies such as tax holidays. The Nepalese case is complicated by different sociocultural, economic and environmental effects generated by different sorts of tourism, interacting with diverse ethnic groups living in varying environmental circumstances.

In the mid-1960s, Nepal introduced the idea of completely catered hiking tours, on which native porters carried all the clients' gear and supplies, set up the camps, handled the cooking and acted as general personal servants. It opened up the hills to an adventurous but tamed travel that insulated the tourist from Nepali languages and customs and the problems of route-finding and procuring food and places to sleep. Its combination of comfort (e.g., large tents, thick foam mattresses, tables and chairs, Western food, camera-only carriage of gear) and exoticness, coupled with the worldwide fame of destinations like Mount Everest and Annapurna, made such organised treks a booming activity at a time of great Western interest in environmental and ethnic tourism and backpacking.

Today, group trekkers are looked down on by independent trekkers. They rarely stay in local tea-shops or homes or dine in the local style, and their interaction with the local folk is narrowed. Although the demonstration effects of the sophisticated gear, cameras, watches and tape recorders may be substantial, and though group trekking places natives in extremely servile positions, the relative lack of interaction makes for perhaps a less profound culture contact than that between natives and independent trekkers, who attempt to maximally interact with locals.

The economic impacts of group trekking are also limited. The bulk of supplies for the group's trip are bought before departure in Kathmandu, because many of the Western-style camping foods (e.g. canned juices, chocolate bars) are available only there. It has been found that not more than 5% of the group trekking food budget is spent locally. Purchases of firewood and the hiring of porters are the major local economic impacts, but porter hiring often has little effect on the communities trekked through, since arrangements for porters are made predominantly in Kathmandu and at the trail head.

Although organised group trekking may affect local food shortages and inflation very little, it has relatively few economic benefits for the depressed economies of the remoter hill regions. Thus, group trekking offers small recompense for the disruption of daily life that it may cause and the damaging environmental impact it often has on popular routes.

For instance, the Sherpa people of the northeast region of Khumbu have seen a shift of economic power from older men of established families to young and middle-aged men, many of whom were not of traditionally high-status families. Other effects include prolonged absence of a large number of males, inflation of agricultural day-labour wage rates affecting the ability of many families to maintain their farms, and a monetarization of the economy.

Financial support of the Khumbu monasteries has dwindled, as has entrance into the monkhood. Several monks had abandoned the monastery for tourist employment, and young men whose high intelligence might once have led them to become lamas were now entering the tourist trade. Some commercialisation of arts occurred, the foremost religious painter of the area having turned to producing work for sale to tourists.

Not all of these changes were due to tourism, however. Changing attitudes to religion and the decline in polyandry, for example, had also been affected by the introduction of secular schools by a foreign aid group led by Sir Edmund Hillary and by the Nepalese government.

By 1980, tourism had become the source of 90% of the area's cash income, and on average one member per household was involved in trekking tourism. The other side of this increasing Sherpa cash income was inflation. While porters' wages tripled between 1964 and 1978, the cost of rice increased fourfold, until by 1978 the price of rice in Khumbu was double that in Kathmandu. Inflation of food and fuel prices took a good deal of the comparatively high income Sherpas were receiving from trekking, and, as independent trekkers began to bargain for foodstuffs in the Saturday market, this was aggravated further.

Another economic side effect of the trekking tourism boom was increasing economic hierarchies, with families involved in the inn business making considerably more profit than those involved only as porters.

During the 1970s, minor friction between tourists and hosts began to occur. Theft and begging grew, and some Sherpas resented the servile nature of porter work and even tourists' attempts at photography. Work for mountaineering expeditions also presented conflicts at times between subsistence wage work and religious values, as several peaks in the area were considered sacred by the Sherpas. Finally, exposure to Western values and material goods began to lead to the adoption of Western-style clothing by the men, and such items as cassette tape-recorders became highly sought after.

As the numbers of trekkers in Khumbu grew, ecological impacts from tourism also appeared. Water springs became contaminated, and inns made large demands on local water supplies. A growing litter problem and vegetation damage were also noted.

The most serious problem, however, was the deforestation of the Khumbu region. The local climate makes a fairly slow forest regeneration period of about 60 years. Sherpas traditionally looked on the local forests as community property and conserved them through restrictions on the cutting of green wood and the appointment of forest guardians to monitor use. This traditional system of controlled use of forest resources for local fuel and building needs broke down during the 1960s and 1970s.

As trekking parties seldom carried their own fuel, the supply of wood for tourists became profitable. Most of this wood was sold to the organised trekking groups which, with their large numbers of porters, open-fire cooking and customary evening bonfires, had a considerable impact. The presence of over 4,000 trekkers per year, plus at least 5,500 supporting porters (most of whom were not Sherpas but residents of lower hill areas), led to a scarcity of wood along the main trekking route. Forests became confined to the more inaccessible areas, and protected stands appear as islands in some valleys where scarcely a bush remains.

The Nepalese government has tried to alleviate some of the growing environmental problems in the Khumbu region. In 1976, the Khumbu area was declared a national park (one of four in Nepal), to be administered with New Zealand advisory aid for the dual purpose of maintaining the environment and promoting tourism. Measures were discussed to establish fixed camping sites in an attempt to: (1) contain vegetation damage; (2) develop a network of toilet facilities to cut down water contamination; and (3) decrease the litter problem. In 1979, a ban on the purchase of firewood within the park by trekking groups was put into effect, and the government placed army guards in the area to patrol the forests.

However, the creation of the national park and government attempts to manage resource use led to conflicts with the local people, who resented the logging to construct the park headquarters and were concerned, despite assurances otherwise, that the park would prohibit their access to lumber and firewood. Local people were seldom involved in planning to minimise overgrazing, deforestation and wildlife loss, and policy decisions in other Nepalese national parks gave Sherpas strong reason for alarm: government concern with environmental preservation was so strict that, in two of Nepal's four national parks and in one of its four wildlife preserves, the inhabitants were removed and resettled.

It is difficult to assess the tourist impact on Khumbu. Economically, the Sherpas have been probably the most successful of all the Nepal hill people in adapting to and exploiting ethnic and environmental tourism, with positive consequences for standards of living. Tourism-generated goodwill toward the Sherpas has led to

fundraising for schools, hospitals and scholarships to continue children's education in Kathmandu.

However, such benefits must be weighed against the effects on inflation and differentiation in wealth, as well as a range of changes in social structure, culture and environmental quality. Certainly, many of the environmental problems hastened or initiated by tourism in Khumbu are remediable, and it can also be argued that other modernisation and development measures are likely to lead to equally great economic and socio-cultural changes in Khumbu. Western medicine, nationalised secular education and nationally structured local government already contributes equally with tourism in affecting, for example, the erosion of traditional roles and the place of Buddhism. Ultimately, the judgement must be made by the Sherpas themselves. Here, there is an occasional division of the communities and a strong joint displeasure over some specific touristic impacts, such as the original plan to site the Everest View Hotel airstrip on cropland and the tourist littering of a community water supply. But, overall, there appears to be an eagerness to participate in tourism, and investment in local inns, tea-houses, restaurants and shops is probably greater than in any other mountain region of Nepal. Whether the famed Sherpa hospitality and the apparently smooth transition to a tourist-based economy will continue with even higher visitation levels and commercialisation of the society will be interesting to see.

RESOURCE 8

CASE STUDIES IN TOURIST DEVELOPMENT 3: FIJI

Source: Adapted from Britton, S. (1983) *Tourism and Underdevelopment in Fiji*, ANU Press, Canberra.

Pacific island tourism is dominated by the package tour. As with most tourism in developing countries, because peripheral tourist industries rely on foreign capital and material imports, a relatively high degree of foreign exchange leakage occurs. Package tours aggravate this situation since the costs of international airfares, travel agency commissions, bank charges, insurance, car rental, even meals, accommodation and some shopping is paid for by tourists before leaving the metropolis. If, as often happens, the tourist purchases a tour oriented around foreign-owned airlines, tour companies and hotels, the host country will have little opportunity to retain income from tourist expenditures. Where tour packages consist of a foreign airline, but with local hotel and other services, host countries receive on average 40-45% of the tour retail price paid by the tourists in their home country. If both the airline and hotels are owned by foreign companies, a mere 22-25% of the retail tour price will be forwarded to the destination country.

This restriction of tourists (and their spending) to an organised, formal travel experience tends to confine the industry itself as an enclave. Many tourists enjoy their vacation only from a base of familiarity, and are unlikely to venture outside the formal tourist industry environment provided by packaged tours. The tourist is in effect being transported to a new place but in a familiar 'environmental bubble'.

As an export industry, tourism generates income for the purchase of imported commodities and services. From 1963 to 1979, gross receipts from tourists increased by a factor of three, and tourism boosted Fiji's foreign exchange earnings with an average contribution of over 32% of gross export income since 1968.

This helped the Fiji economy to overcome one of the most serious aspects of the colonial era - a dependence on a narrow range of export commodities. Up until the early 1960s, at least 60% of total export receipts were generated from the sugar industry. By 1986, tourism was Fiji's largest single source of foreign exchange.

From gross tourist receipts in 1975, 56% of the total $67 million was directly lost through payments for imports, foreign staff salaries and profit repatriation. Of the $29.3 million remaining in Fiji, another $9.3 million, or 13.9%, was lost through the consumption of imports by tourism. Thus 70% of tourism-generated foreign exchange was lost. Tourism's leakage factor is higher than any other industry except mining, due largely to a reliance on imports which is in turn caused by the inflexible taste preferences of tourists in accommodation, food and transport, and the high degree of foreign ownership in the industry.

Tourism accommodation and shopping accounted for 80% of tourism receipts, and the linkages of these sectors are the key to understanding the limited multiplier effect of tourist spending. After 70% of shopping sector receipts were returned overseas, the multiplier effect of tourist shopping was limited almost entirely to the service sectors of the economy (particularly transport, retailing and wholesaling firms). Apart from small quantities of handicrafts, few local goods were sold to tourists. The accommodation sector made greater use of local products including food and beverage purchases. 47% of these hotel purchases were from local producers, and 53% were from imports. The local benefits of hotel food and beverage purchases were further boosted with the taxes, duties, and distributors' margins gained by food imports.

However, the picture is more complex than would first appear. Local food industries have a high import demand (dairy products, beer) and/or extensive foreign ownership (beer, tobacco, soft drinks). Hotels rely on supplies from large wholesale-retail companies operating in Fiji. Specialising in imported brand names, the largest of these companies are foreign (Australian) owned. Although local producers supplied 47% of hotel foodstuff purchases, most of this came from large 'formal sector' companies, particularly for meat, tobacco, bread, liquor and dairy products. In addition, hotels relied on large wholesalers for fruit and vegetables because of the inability of rural small producers to supply produce regularly in the required quantity and quality. Finally, the chance for locals to supply hotels is further limited by the largest companies growing foodstuffs on their own land. In recent years two hotel companies supplied most of the fruit and vegetables for seven of their eleven hotels (eight of which are in rural areas close to potential indigenous suppliers).

Turning lastly to the construction and outfitting of hotels, the inability of local enterprises to supply hotel requirements becomes more apparent, although Fiji fares better in this respect than some other underdeveloped countries. Of the materials needed for a fully operational standard class hotel in 1976, 68% came from overseas.

Nevertheless, the construction of new tourist accommodation provided the major force for growth in the economy in the 1970s. However, there have been adverse side effects.

The concentration of construction activity in the tourist industry hindered government attempts to develop secondary industry. Tourism construction reinforced the tertiary sector rather than making inputs available to agricultural producing and processing industries.

As the most dynamic industry over the last decade, tourism has played a key role in maintaining, but not increasing, the proportion of wage earning jobs available in the economy. Tourism's propensity to stimulate employment was lower than for all primary and secondary sector industries. Except for consumer spending and communications, tourism also had a lower employment potential than other tertiary sectors. And employment in the hotel sector has been falling in recent years. Furthermore, the cost of providing tourism jobs is high. An investment of at least $25,000 is needed to create one hotel work place. In this respect, tourist shopping and handicraft vending may be better avenues to promote employment, although they probably offer less security. But tourism did have a very high demand for labour during the building and outfitting phases of hotel development, and the hotel sector had a higher labour demand than tourism as a whole.

The connection between ownership (and size) of tourism enterprises and their use of different financial sources is important in understanding indigenous participation in tourism. Because of low initial capital resources, low levels of management skills, inexperience in the tourist industry and the requirements of foreign tourists, Fijian and many Indian entrepreneurs have not been able to obtain adequate finance through normal commercial channels, or develop viable tourism enterprises. By contrast, banking, insurance, and government agencies have been established directly to serve foreign, European and other formal sector companies.

The Fiji Government is the single most important local beneficiary of tourism. However, over a third of tourism-generated public revenue was spent by government on administration and infrastructural development directly related to tourism. In a country which has been unable to achieve balanced development, let alone adequate infrastructure for its own population, this expenditure is a serious distortion in the distribution of public funds. It has not necessarily been compensated for by the other benefits from tourism.

The advantages enjoyed by foreign, European and formal sector companies generally, as opposed to the barriers faced by most Indian, Fijian and smaller enterprises, is the single most important feature of the Fiji tourist industry.

Given the racial ordering of Fiji commerce and society generally, it is important to identify the extent to which each of the major racial groups benefits from tourism. Foreign companies have accounted for over 60% of retail turnover, with local European, Indian and Fijian enterprises accounting for a steeply reducing proportion. Indian and Fijian enterprises accounted for only some 15%.

The introduction of tourism to Fiji can be seen as the result of two mutually reinforcing sets of factors. Colonialism created economic and political stresses in the original agricultural economy, necessitating the further introduction of similar economic forces. Tourism was one such means of alleviating these stresses. Yet tourism was itself part of the colonial system, leading to a series of problems in a post-colonial context.

On the one hand, tourism brings obvious economic benefits: the generation of foreign exchange, the attraction of foreign capital, the creation of jobs, and the diversification of exports. It has also helped provide an extensive international transport and communications network, and facilitated the upgrading and expansion of local infrastructure.

On the other hand, these benefits have been gained at considerable cost. The most concrete of these have been the administration of tourism, the provision of investment incentives and the public construction and maintenance of tourism infrastructure. More important have been the intangible costs. The tourist industry, with its dominant metropolitan interests, its technological and political requirements and its spatial characteristics, has exacerbated the adverse conditions typical of a dependent capitalist social formation. The distribution of tourism income aggravates already serious class and racial tensions in Fiji society, and reinforces the regional inequality evident in the country's spatial organisation.

Foreign capital, the main force behind tourism development, has been the main beneficiary of the industry. Except for the government, Fiji's European business community gained most from tourism. On the other hand, Fiji's non-white indigenous groups were confined to relatively unprofitable activities. While they provided the labour requirements of tourism enterprises, their control of tourism capital was minimal. Only in handicrafts and entertainment groups (both having very low rates of remuneration) were locals the main beneficiaries.

This pattern followed the parallel concentration of commercial resources, power and expertise in the hands of large overseas firms. Three corporations provided more than 90% of international airline seating capacity (ex-

cluding regional carriers) and five companies accounted for all Fiji cruise-ship operations. Within Fiji, hotel chain companies operated 65% of the country's total accommodation stock and 58% of turnover.

The 1987 coup had a dramatic effect on the Fijian tourist industry, especially in Australia where 43% of Fiji's tourists originate. While the decline in visitors was soon arrested with large savings on cut price Fijian tours, the Fijian people suffered major effects. Widespread sackings, a 15% cut in public service salaries, currency devaluation and inflation all resulted, further heightening poverty, inequality and racial tensions.

Whatever the costs of tourism, Fiji has not been in a position to reject large-scale foreign tourism capital. With balance of payments deficits and low domestic savings, foreign capital eased some economic problems. But it has only sidestepped the serious structural, political and racial distortions in the country's social organisation. Tourism in Fiji, therefore, operates in two contradictory directions. It helps to alleviate problems derived from Fiji's colonial past, but is itself a product of this colonial structure and acts to exacerbate many features of this original condition.

RESOURCE 9

BEING AN ENLIGHTENED TRAVELLER

People visit other places for a variety of reasons. Among them are:

- to escape the stresses of everyday life, to relax and be happy;
- to be entertained by the spectacular and different;
- to meet people and make new friends;
- to learn about other cultures, develop understanding and empathy with other peoples;
- to have a wild social time in a place far from the strictures and routine of home;
- to experience personal challenges and adventures.

In groups, complete the following tasks and share the outcomes with other groups:

1. Which of these purposes is/are assumed by the advertising copy in Activity 1 (Resources 1-3)? What is the likely relative impact of these different kinds of tourism?
2. Following is a list of recommendations from One World Travel (a sustainable tourism agency) for how an enlightened traveller should plan and conduct a visit. Consider and evaluate each recommendation. What is your view of each recommendation?
3. Given these recommendations, what kind of enlightened travel programme would you be able to suggest for a visitor to your own area? Write a tourist 'blurb' for visitors to your area similar to those in Activity 1 above, but one which would promote enlightened travel as outlined in the 13 points below.

RECOMMENDATIONS FOR THE ENLIGHTENED TRAVELLER

1. Where possible, stay with local people or in traditional accommodation. This will reduce the need for expensive, resource-intensive hotels and facilities.
2. Eat local food and drink where possible, to reduce import costs and litter from packaging, and to support local producers.
3. Walk, cycle or use local buses to get around.
4. Don't hunt or buy souvenirs made from native animals.
5. In visiting an area, carry out your rubbish, leave only biodegradable material.
6. Learn as much as you can about local language, customs and history before arriving at the destination.
7. Be sensitive to local customs, observe carefully, treat people with respect.
8. Be sensitive in using cameras. These can be intrusive and offensive if used too conspicuously.
9. Dress modestly, especially in and around temples, mosques, churches and shrines.
10. Think about the sexual relationships you might form there and the position of power you hold in that relationship.
11. Think about the effects of bargaining on the incomes of the people you are dealing with, and whether it is a fair thing to do in different situations.
12. Talk to the local people about their country whenever possible.
13. Think about the impact of tourism on the community you are visiting, and how you might avoid making harmful impacts yourself.

RESOURCE 10

BEING A DISCERNING HOST

People travel for various reasons, and these different purposes have different advantages and disadvantages. Thus we cannot look on tourism as a single activity, but need to consider what kinds of tourism and tourists should be encouraged. This is illustrated in the following comment from a report into tourism on Bermuda which concluded that:

> *We recognise that the attraction of this Island is reduced by overcrowding. As traffic multiplies, attraction lessens (tourists add to traffic); as noise increases, attraction decreases (tourists contribute to noise); as social and cultural instability rise, attraction falls (tourism shakes our cultural stability). As we have greater numbers of tourists, we may be repelling the very tourists that would be our ideal: the long-staying, high-spending, committed to quality visitors.*
>
> (Hayward, Gomez and Sterrer, 1981, p. 57, quoted in Butler, 1991)

Activity

The following descriptions outline some kinds of tourism and tourists.

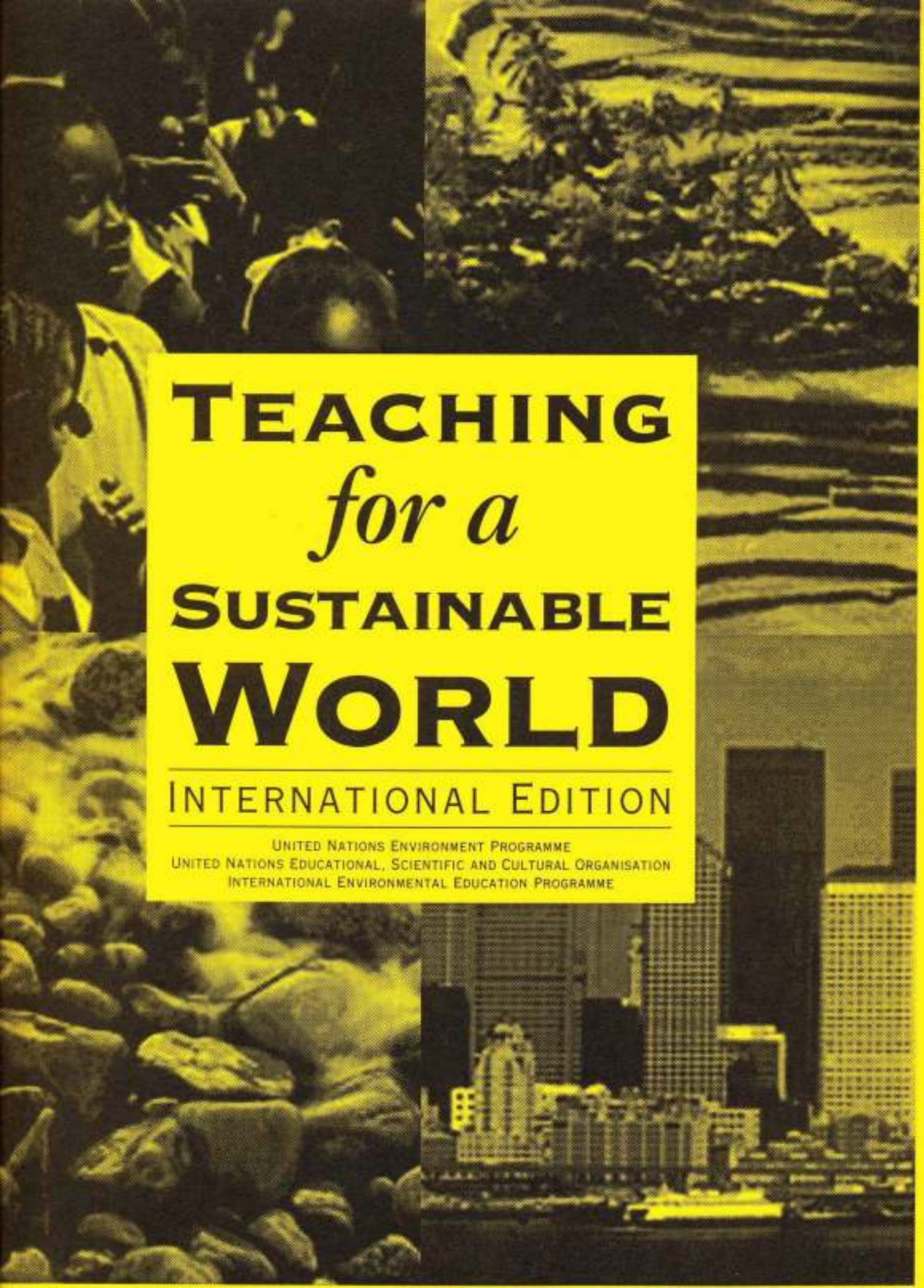
1. Read the descriptions, consider the differences among them, and decide which types of tourism and tourists would have the least detrimental impact on host cultures and environments.
2. Suggest three strategies which host countries could use to attract the tourists who are most valuable to the host country but who have the least detrimental impact?

Kinds of Tourism

Ethnic Tourism	Marketed in terms of the quaint customs of the indigenous and often exotic people. The tourist is invited to buy primitive wares and curios, pay to see dances and ceremonies and visit native homes.
Cultural Tourism	Dwells on the picturesque aspects of local culture, such as traditional housing styles, horse or ox driven carts, and crafts. Sites of this kind of tourism are often near tourist resorts and subject to the influence of large numbers of tourists.
Historical Tourism	Includes the glories of the past, monuments and museums, attracting mainly education-oriented visitors. Usually concentrated in or near major urban centres.
Environmental Tourism	Primarily oriented to geographic interests and education, including trips to wild remote areas. Often associated with ethnic tourism.
Recreational Tourism	Sun, sand, sea and sometimes sex are the chief attractions of this variety, which appeals to people who want to relax and commune with nature.

Kinds of Tourists

The Explorer	Seeks adventure, discovery and involvement with the local people. May be sympathetic to local environments and attempt to accept local lifestyles, though can also have considerable impact on areas not organised and prepared for such visits. Unlikely to return a second time, but will tend to look for new areas to explore.
The Elite	Individually tailored visits to exotic places. Likely to be small in number but to spend high sums. Can be destructive depending on purpose of visit (e.g. hunting). Usually looks for accustomed luxuries in accommodation, food, etc.
The Mass	Package tours leading to tourist enclaves and standard Western facilities. Considerable sources of income and employment. High demand for Western facilities, foods, services and entertainment, but also for local souvenirs and entertainments. Often a standard demand for sun, sand, sea and sex.
The Alternative	Similar to the explorer in many ways, though less intent on adventure and more interested in the environment, local contacts and specific features of the host culture. Can be attracted in reasonable numbers, but is likely to spend less than the mass tourist.



MODULE 21

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID
AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT
AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC
GRIFFITH UNIVERSITY

HOPE *or* DESPAIR?

SUSTAINABLE LIVING IN INFORMAL URBAN SETTLEMENTS

ALISTAIR AND GLYNIS CLACHERTY
CLACHERTY AND ASSOCIATES
SOUTH AFRICA

INTRODUCTION

In most developing countries there is a major urbanisation trend as rural people migrate to the cities. However, access to formal housing is usually extremely limited and the development of usually large and high density informal settlements in urban areas is common. In addition, many residents in informal urban settlements have moved there from more formal high density residential areas where land and suitable housing are not available.

Many myths exist about residents of informal urban settlements, for example, that such communities are poorly structured, that social problems are rife, that they are hotbeds of crime and are dangerous, that the people live degraded and hopeless lives, and that informal urban settlements should be eradicated at all cost. While there are elements of truth in most of these perceptions, in fact the picture is usually rather different. For example, there is often a very strong social structure in which people co-operate in order to improve their circumstances in these settlements. Although small and constructed of materials such as old corrugated iron, cardboard, or poles covered with sheets of plastic or sheets of metal beaten from large oil drums, such homes reflect a desire and ability to live in dignity and cleanliness, in spite of the extremely difficult circumstances that people find themselves in.

This workshop will examine:

- global urbanisation patterns;
- factors influencing the emergence of informal urban settlements;
- the nature of informal urban settlements and the ways people live in them;
- informal urban settlements in their broader urban context; and
- planning principles that support sustainable living in informal settlements.

OUTCOMES

This workshop aims to help students:

- to understand some of the factors influencing urbanisation;
- to develop a broad and inclusive view of informal urban settlements and the role they plan in the urban context;
- to analyse their own stereotypes of informal urban settlements;
- to counter some of the 'myths' commonly associated with informal urban settlements; and
- to develop a better understanding of informal urban settlements and some personal and community strategies used to cope with living in such settlements.

WORKSHOP OUTLINE

The workshop consists of eight activities:

1. Introduction to the Workshop

The introduction identifies key themes as used as the objectives of the workshop.

2. Overview of Urbanisation Trends

Participants analyse some urbanisation data from which the facilitator collates the key points identified.

3. Environments of Poverty

An extract written from the perspective of informal urban settlements as 'environments of poverty' is read, discussed and reflected upon.

4. Opening up the Debate

This activity asks participants to review ten commonly held perceptions about informal urban settlements and to rate them. The exercise challenges many of the myths about such settlements.

5. Stories from Orange Farm

Orange Farm is a major informal urban settlement south of Johannesburg in South Africa. Four stories from Orange Farm are presented, read and discussed. The Stories from Orange Farm reveal the strategies that people and groups in informal urban settlements adopt to survive and to live their lives in dignity and hope.

6. Getting it Right - Planning for Healthy Cities

Participants imagine that they are members of a team of urban planners in a developing city and prepare a range of principles and projects to help ensure that patterns of sustainable living can be achieved in informal settlements.

7. Review your Ratings

Groups re-examine their perceptions of informal settlements by repeating Activity 3 and explaining any changes in their perceptions after completing the various activities in this workshop.

8. Curriculum Application

Participants develop the outline for a teaching unit which would assist students they teach understand the concepts developed in this workshop.

MATERIALS REQUIRED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Objectives of the Workshop

OHT 2: Questions for Activity 3

OHT 3: Urban Planning Exercise

RESOURCES

Resource 1A: The World's Top 10 Cities

Resource 1B: Perspectives on Cities in the Developing World

Resource 2: Environments of Poverty

Resource 3: So They Say: Common Statements about Informal Urban Settlements

Resource 4: Stories from Orange Farm

Resource 5: Getting It Right: Planning from a Sustainable Development Perspective

Resource 6: Three Ways to Use $20 Million to Improve Conditions in a City of 1 Million People

ADDITIONAL READING

Ashton, J. (ed.) (1992) *Healthy Cities*, Open University Press, Milton, Keynes.

Atlas of the Environment, WWF, London, 1992.

Berg, P. (1989) *A Green City Program*, Planet Drum Foundation, San Francisco.

Dogan, M. and Kasarda, J.D. (eds.) (1988) *The Metropolis Era*, Volume 2, Mega-cities, Sage, London.

Gilbert, A. and Gugler, J. (1989) *Cities, Poverty and Development*, 2nd edition, Oxford University Press, Oxford.

Hardoy, J.E. and Satterthwaite, D. (1986) Shelter, Infrastructure and Services in Third World Cities, *Habitat International*, 10 (4).

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Ryn, S. and Calthorpe, P. (1986) *Sustainable Communities*, Sierra Club, San Francisco.

Skinner, R.J. and Rodell, M.J. (1983) *People, Poverty and Shelter: Problems of Self Help Housing in the Third World*, Methuen, New York.

World Commission on Environment and Development (1987) *Our Common Future*, Oxford University Press, Oxford.

ACTIVITIES

1. Introduction to the Workshop

A. Focusing Activity

Explain to participants that the main differences between formal and informal housing are:

In the case of formal housing, the roads, plots of land, electricity, water, sewerage, gas, telephones, public transport, etc. are usually planned or provided by a relevant authority, and this is generally done *before* people are allowed to move into the area. In an informal settlement, the reverse is usually true - people occupy an area and erect homes themselves in the absence of most of the services and infrastructure that people living in formal residential areas take for granted. If they have some sort of permission to live on the land it makes their lot a little easier. However, in many cases such people simply occupy the land without permission. In such cases of illegal occupation of land, the derogatory term 'squatters' is often applied to the people concerned.

Ask the participants to work in pairs. One partner (who pretends he/she lives in an informal urban settlement) should tell the other (who pretends he/she lives in a formal urban settlement) what life in the informal settlement is like. For example, he/she can describe how/where they get water, where they wash and iron their clothes, what sanitation they use, how they get their mail (there are often no street addresses in an informal urban settlement), etc.

This activity should not go on for more than about three minutes. If you wish, although it is not necessary, the 'formal residents' can now go through a similar description of life where they live.

B. Overview of Workshop

- Use OHT 1 to introduce the objectives of the workshop.

2. Overview of Urbanisation Trends

Ask the participants to form groups of about six people. These groups will report back to the main group. Each group should organise a rotating spokesperson for each activity. (Before commencing with the activity, the group members should introduce themselves to each other -unless it is clear they know each other.)

Present the information contained in Resources 1A and 1B. Resource 1A is a table of statistics on the world's ten largest cities. Resource 1B contains quotations about cities in the developing world.

Ask participants what this information tells them about urbanisation. Before they start, inform them that they will have to report back the key points that the group identified. Allow 5-10 minutes of discussion.

The report back should be structured so that each group reports one key point at a time in rotation until most of the important issues are captured on a large piece of chart or poster paper.

3. Environments of Poverty

This activity relates to the negative perceptions commonly held about informal urban settlements. The activity presents these negative perceptions without challenging them; and provides a 'stopping point' where these perceptions are summarised by the groups.

Give each group a copy of Resource 2. Each group should read through the extract presented in Resource 2. After having read the extract, ask each group to answer the questions on OHT 2 (do not reveal question 4).

1. What sort of person wrote this passage?
2. What sort of job does this person do?
3. What was the purpose of writing? (i.e. what is the hidden agenda?)

Reflection: Reveal Question 4 on OHT 2. In order to answer this question, ask each group to summarise the information presented so far in about three key points. They will then be given an opportunity to report these points back to the main group.

4. What perceptions of informal urban settlements have been created or supported by Activities 2 and 3?

4. Opening up the Debate

Activity 3 dealt with commonly held negative perceptions of informal urban settlements. Activity 4 is designed as a way of getting participants to start thinking more deeply about the issues. They will hopefully have some of their preconceptions about informal urban settlements challenged.

- Ask participants to work in their groups.
- Give each group a copy of Resource 3: 'So They Say: Common Statements about Informal Urban Settlements'.
- Ask the groups to work through each of the ten statements rating them as described in Resource 3 itself. This should be a collective process and the rating should be a consensus decision.
- Ask for group responses. Then ask the groups to put their ratings away in a safe place as they will return to this exercise again in Activity 7.

5. Stories from Orange Farm

Orange Farm is a very rapidly growing informal urban informal settlement south of Johannesburg in South Africa. It presently has about 35,000 homes, most of which are informally constructed. The total population is about 120,000 people from different backgrounds. Most of the people are evicted farm labourers from nearby districts and far away districts, e.g. Frankfort in the Free State and King William's Town in the Eastern Cape. Even people from former Bantustans and former tenants from many townships have discovered Orange Farm to be a sanctuary of the people who were homeless.

Resource 4 consists of four stories from Orange Farm. Divide participants into four groups and give one of these stories to each group.

Ask them to read that story and discuss it amongst themselves. The group should identify:

- the strategies that individuals or groups in Orange Farm have adopted in order to survive and improve their lives; and
- key changes in legislation that will enable residents in informal urban settlements to become constructively involved in reconstruction and development activities that will secure for them a better quality of life.

Hear group reports and summarise the key points from these discussions. This activity will set up thinking for the next activity.

6. Getting it Right: Planning for Healthy Cities

Participants should work in groups. The following instructions should be given to the groups.

- This instruction is presented in OHT 3. Imagine that your group is a team of urban planners in a developing city. Informal settlements are mushrooming in and around your city. The people establishing these settlements are from rural areas as well as from formal, but grossly overcrowded, high density residential areas. Your task is to develop a set of five core principles that will guide your urban and regional planning department over the next 20 years. You should consider national, regional and local levels as well as economic and environmental perspectives in developing your principles.

Write up your core guiding principles on chart or poster paper in legible writing.

- Display the core principles of each group side by side. The entire group, led by the facilitator, should go through the principles and select (either by rewriting or simply by somehow highlighting on the sheets themselves) the best ten principles.
- Now also in plenary, read through the principles presented on Resource 5. These have been compiled from recent literature on this subject and reflect a progressive perspective based upon concepts of sustainable development. Are there any major differences between your lists and this one? Can you explain why this might have happened?

7. Review your Ratings

This activity goes back to Resource 3 and asks participants, in their groups, to review their ratings in the light of what they have learnt from Activities 5 and 6. This activity also serves as an evaluation of the workshop. As facilitator you could extend the 'why' part of the discussion into a more detailed evaluation if you wish.

It is not important to ask for comment about this review, but the group (and you as facilitator) may find it interesting to comment on how perceptions have or have not changed and why.

8. Curriculum Application

This activity puts the participant on centre stage and serves to pull the main arguments of this module together.

While this may not be true everywhere, most conventional geography or social science syllabus will generally deal with issues of urbanisation and the lives of poor, homeless or oppressed people unsympathetically. In this activity participants are required to develop an *outline* for a teaching unit on sustainable living in informal urban settlements in response to the syllabus topic 'Urban Problems: Urbanisation and City Growth'.

The teaching unit should address the following points:

- Rationale and aims
- Knowledge (key concepts), skill and values objectives
- Activity sequence - overview of each activity only
- Resources required
- Assessment and evaluation plans.

As a follow-up activity - or if time permits - participants could develop this outline into a more substantial set of curriculum resources.

OHT's

OHT 1

Objectives of the Workshop

- to understand some of the factors influencing urbanisation
- to develop a broad and inclusive view of informal urban settlements and the role they plan in the urban context
- to analyse their own stereotypes of informal urban settlements
- to counter the 'myths' commonly associated with informal urban settlements
- to develop a better understanding of informal urban settlements and some personal and community strategies used to cope with living in such settlements

OHT's

OHT 2

Questions for Activity 3

1. What sort of person wrote this passage?

2. What sort of job does this person do?

3. What was the purpose of writing? (i.e. what is the hidden agenda?)

4. What perceptions of informal urban settlements have been created or supported by Activities 2 and 3?

OHT's

OHT 3

URBAN PLANNING EXERCISE

Imagine that your group is a team of urban planners in a developing city. Informal settlements are mushrooming in and around your city. The people establishing these settlements are from rural areas as well as from formal, but grossly overcrowded, high density residential areas.

Your task is to develop a set of five core principles that will guide your urban and regional planning department over the next 20 years. You should consider national, regional and local levels as well as economic and environmental perspectives in developing your principles.

Write up your core guiding principles on chart or poster paper in legible writing.

RESOURCE 1A

THE WORLD'S TOP 10 CITIES

Source: Compiled from *New Ground*, 12, 1993; and *Atlas of the Environment*, WWF, London, 1992.

Rank	City	Population in 1960 (Millions)	City	Population in 1985 (Millions)	City	Population in 2000 (Millions)
1	New York	14.2	Tokyo	18.8	Mexico City	24.4
2	London	10.7	Mexico City	17.3	Sao Paulo	23.6
3	Tokyo	10.7	Sao Paulo	15.9	Tokyo	21.3
4	Shanghai	10.7	New York	15.6	New York	16.1
5	Rhein-Rhur	8.7	Shanghai	12.0	Calcutta	15.9
6	Beijing	7.3	Calcutta	11.0	Bombay	15.4
7	Paris	7.2	Buenos Aires	10.9	Shanghai	14.7
8	Buenos Aires	6.9	Rio de Janeiro	10.4	Tehran	13.7
9	Los Angeles	6.6	London	10.4	Jakarta	13.2
10	Moscow	6.3	Seoul	10.2	Buenos Aires	13.1

RESOURCE 1B

PERSPECTIVES ON CITIES IN THE DEVELOPING WORLD

1. The population of many of sub-Saharan Africa's larger cities increased more than sevenfold between 1950 and 1980 - Nairobi, Dar es Salaam, Nouakchott, Lusaka, Lagos and Kinshasa among them.[1]

2. It took London 130 years to go from 1 million to 8 million inhabitants; by contrast, Mexico city zoomed from 1 million to 20 million in less than 50 years.[2]

3. About a third of the people of the Third World's cities now live in desperately overcrowded slum and squatter settlements. Many are unemployed, uneducated, undernourished and chronically sick. In Bombay and Rio de Janeiro, over 3 million people are squeezed into slums and shantytowns; 60% of the entire population of Bogota and Kinshasa - and 79% of the people of Addis Ababa live in slums.[3]

4. City Reports[4]

   Nairobi, Kenya: In 1975, Nairobi had 57% of all Kenya's manufacturing employment and two-thirds of its industrial plants. In 1979, Nairobi contained around 5% of the national population.

   Manila, Philippines: Metropolitan Manila produces one-third of the nation's gross national product, handles 70% of all imports, and contains 60% of the manufacturing establishments. In 1981, it contained around 13% of the national population.

   Lima, Peru: The metropolitan area of Lima accounts for 43% of gross domestic product, for four-fifths of bank credit and consumer goods production, and for more than nine-tenths of capital goods production in Peru. In 1981, it was home to around 27% of Peruvians.

   Lagos, Nigeria: In 1978, Lagos' metropolitan area handled over 40% of the nation's external trade, accounted for over 57% of total value added in manufacturing, and contained over 40% of Nigeria's highly skilled workers. It contains only some 5% of the national population.

   Mexico City, Mexico: In 1970, with some 24% of Mexicans living there, the capital contained 30% of the manufacturing jobs, 28% of employment in commerce, 38% of jobs in services, 69% of employment in national government, 62% of national investment in higher education, and 80% of research activities. In 1965, it contained 44% of national bank deposits and 61% of national credits.

   Sao Paulo, Brazil: Greater Sao Paulo, with around one-tenth of Brazil's national population in 1980, contributed one-quarter of the net national product and over 40% of Brazil's industrial value-added.

References

1 World Commission on Environment and Development (1987) *Our Common Future*, Oxford University Press, Oxford, p. 236

2 *Atlas of the Environment*, WWF, London, 1992, p. 21.

3 *Atlas of the Environment*, WWF, London, 1992, p. 21.

4 Hardoy, J.E. and Satterthwaite, D. (1986) Shelter, infrastructure and services in Third World Cities, *Habitat International*, 10(4).

RESOURCE 2

ENVIRONMENTS OF POVERTY

Source: *New Ground*, Winter 1993.

For millions of people, these environments of poverty (informal urban settlements) pose a far more urgent threat than global climate change. Even a First World institution like the World Bank acknowledges the main environmental priorities for the urban poor of the Third World are not questions of global warming or ozone holes but simple matters of improved housing and affordable basic water and sanitation services. The following points shed some light on the circumstances behind these concerns of the poor in the cities of the developing world:

- More than 60 million people live in homes and neighbourhoods which pose a threat to life and health.
- Four million infants or children die every year from diarrhoeal disease, largely resulting from contaminated food or water.
- One child dies every 20 seconds from the effects of contaminated water.
- Two million people die from malaria each year and 267 million are infected.
- Hundreds of millions of people suffer from debilitating infestations of intestinal parasites.
- The number of urban people without access to piped water has increased by 100 million over the past ten years.
- Only a little over half the urban population of the developing world has access to adequate sanitation.
- An estimated 30 to 50% of garbage is left uncollected in residential areas of developing world cities.
- Some 700-900 million people are infested with hookworm with 1.5 million cases of disease and 50,000 deaths a year.

Mounting pressure on land in rapidly growing Third World cities has resulted in the residential occupation by the poor of so-called 'marginal urban environments': the worst areas in terms of physical stability, areas that might have been avoided in the past by populations because of the threat posed to human life. Areas occupied by many informal settlements are prone to environmental disasters.

RESOURCE 3

SO THEY SAY: COMMON STATEMENTS ABOUT INFORMAL URBAN SETTLEMENTS

Work in groups of about five participants each and rate these statements from 1 to 5 where:

1 = Blatantly false;

2 = False, but has elements of truth in it;

3 = 'Ambiguous' or you are 'not sure';

4 = Mostly true, but something in it is not quite right; and

5 = Indisputably true.

Circle the number that matches your group's opinion.

1. Overcrowding and slum developments are typically 'Developing World' problems.	1	2	3	4	5
2. Rural people would be better off staying in their villages than moving into shack settlements near cities.	1	2	3	4	5
3. Squatter settlements pose a serious health risk to city residents.	1	2	3	4	5
4. Unemployment gives rise to poverty; poverty gives rise to crime, and the major source of crime is to be found amongst shack dwellers.	1	2	3	4	5
5. Given land security, people living in informal urban settlements will quickly be able to stabilise their communities and merge into mainstream life in urban areas.	1	2	3	4	5
6. Squatter settlements spring up so rapidly that they have a very poor social structure. Consequently social problems are rife and people live degraded and hopeless lives.	1	2	3	4	5
7. The government should promote rural development schemes so that people do not come to the cities.	1	2	3	4	5
8. People in informal urban settlements are unskilled and unschooled. What hope have they of succeeding by coming to the city?	1	2	3	4	5
9. If urban planners had proper urbanisation strategies then the problems of shack settlements would not happen.	1	2	3	4	5
10. The majority of shack dwellers live in small but clean homes. The shacks are usually decorated inside and sometimes even have flowers growing outside.	1	2	3	4	5

RESOURCE 4

STORIES FROM ORANGE FARM

This resource contains stories from Orange Farm. Orange Farm is a very rapidly growing informal urban settlement south of Johannesburg in South Africa. It presently has about 35,000 homes, most of which are informally constructed. The total population is about 120,000 people from different backgrounds. Most of the people are evicted farm labourers from nearby districts and far away districts, for example, Frankfort in the Free State and King William's Town in the Eastern Cape. Even people from former Bantustans and former tenants from many townships have discovered Orange Farm to be a sanctuary of the people who were homeless.

1. Connie's Story

Connie Mofokeng is a single mother living in Orange Farm. She is an active member of the community-based organisation called 'Orange Farm Environmental and Agricultural Projects' OFEAPRO). Here she tells her story.

I grew up in Soweto with my parents. As I grew up and my baby grew bigger I needed to find a place of my own. Many younger people were in the same position. Many people rent back rooms or even put up shacks in the yard of someone's house, but the rent is very high. We are sick and tired of lodging in backyards. There was a place where we could put up shacks. It was called Mofolo Park. But conditions there were not good, and the nearby residents treated us badly. They said we stole things from them and we were dirty. Mr Tshabalala (a community leader) organised for us to go and see some land on Orange Farm where we could move to.

Now in Orange Farm we are free. This place is ours and we can live our own lives. I paid 500 Rand (approximately $US200) for this plot and soon we will be getting title deeds. But we are far from town and there is still not much here. I have to travel far to sell the things I make. Life is hard. We don't have money and we can't buy food and bricks.

To make a living I knit jerseys. I got this knitting machine from my mother and she taught me. I am lucky - I own my machine, but most people have to buy on HP (hire purchase). If they can't pay they come and take the machine the same month. It's not right.

I also buy bundles of second-hand clothes that they send from Europe. I take them and sell them in Vanderbyl Park (35 km away). We spread them out on the pavement next to the shops and people buy from us.

My dreams are to start a creche here for my people and also I want to become a foster mother. I can get money from the government for support. I also dream of having a small plot for cows and chickens and fresh vegetables. These are things I can do to help me get some money and to help my community.

Socially life is good. It's quiet and safe. Most of us around here are from the struggle in Mofolo Park, so we support each other. My sister lives in that house over there and we help each other. The schools are also good. There are many community-based organisations. Women's Voice is very active and projects like gardens, brick-making, tailoring. There are also literary classes. Some people run shebeens (informal pubs).

But what can we do when we are so far from town? Transport is expensive. There are no proper jobs here. But we try. Somehow it's painful, but it's part of life.

2. Annekie and Bessie's Story

Mrs Annekie Pepeza and her neighbour, Mrs Bessie Bela, live in Orange Farm in simple iron shacks that they, their husbands and other neighbourhood helpers built. Their houses have internal structures of wooden poles set in the ground. These structures are covered with corrugated iron sheeting. Even obtaining the corrugated iron is a struggle. How do poor people transport such materials from a demolition site in Johannesburg 45 km south to Orange Farm? This, and the need to build simply, means that the houses are small - two rooms, each about 3 m square, one serving as the living room and the other as the bedroom. The roof is slightly sloping and is less than 2 m above the concrete floor. The living area is furnished with basic cupboards, a fridge (the whole area was recently electrified on a pre-paid metering system), kitchen table and chairs. The walls are decorated with old calendars and numerous copies of a wall map of Pretoria.

These conversations with Annekie and Bessie were conducted in Sesotho and translated into English for me by a field assistant. They reflect, therefore, a competent use of language which is not the picture officialdom would normally see.

Annekie

I came here from Soweto. My husband came from the rural farms. We came here because people could get their own land, but we need to be sure that we will get this land. How do we know it is really ours until we have papers? Also,

these plots are too small, and we have no services like dustbins and removals.

We are struggling to live here. We get piece jobs with white people - kitchen work, washing, ironing, but people don't pay us enough. My husband is visiting friends in another section of Orange Farm. They are discussing ways to get work. They meet like this so that if any one of them knows about work they all hear about it soon and can go and get the work. Maybe he will be working on a building site for a few weeks. My husband made this concrete floor.

Bessie

I was staying with my parents and then I wanted to have my own place. I was a single parent. I heard about the opportunity to get a place in Orange Farm. People can have their own land. We can be free here and have a safe place for our children to feel relaxed and not supervised under a landlord. We also felt owned by the municipality (black land ownership in South Africa was not permitted - all homes were rented from a local authority). We wanted a new spirit. This land is mine. I feel attached to it. I can freely sell it. There are no land restrictions and we expect better houses to be built.

To earn a living we need to do odd jobs and I share work with my neighbour. We bring people's washing here and do it together. But the water supply is very unreliable. It is very depressing - we can't even guarantee our work on time.

The toilets (free standing units behind the houses) don't work well. They use water, but are not flush toilets. There is a small tank behind them that has to be emptied. But we don't have 30 Rand ($US12) to pay the municipality to empty them. The provincial administration supplied them without consultation. They brought them here only to get money out of our shit. We suspect the supply contract was given to somebody's brother.

Child care is done by neighbours. We share our work and our problems. There is a strong collective spirit here. We are forced by need to have solidarity. We swap clothing for our children. That's how we live here.

3. Olga's Story

Ms Olga Lutu is a powerful community leader and initiator of numerous community-based development projects. She recently received an award in recognition of her services. We asked Olga what it was that made Orange Farm a successful community.

It is the history of oppression and struggle as well as pride of ownership.

The negative things that have happened have given us vision and purpose. We are being chased off land under Section 10 (of the pre-1994 South African Government). This gave us a dream for land of our own. We can now call this land ours. There was no formal structure here so it forced us to get organised for ourselves. In the face of many difficulties we just did it. That gave us a very strong community spirit. We organised a taxi association, people started their own shops (usually in street-side shelters) and saw the opportunity for business. This allowed us all to look at Orange Farm through positive eyes. It has taught us self-reliance. The new government has been promoting Community Development Forums, etc. For us these are not a new thing.

We organised ourselves according to interest groups that were generated informally out of needs. Schools were started - in shacks - the big one is still in the long buildings of a chicken farm where it was started by a resident. There are now 101 Community Based Organisations (CBOs) that we are aware of. These include 25 vegetable clubs linked to Dig for Victory.

The key issue had been land. We call this land our own. We are now negotiating for direct land ownership. (This has since been achieved). *We are talking of homes, not houses.*

4. Dae's Story

Mr Dae Molapo (he finds it amusing that his parents gave him a Welsh name and no African name) has training and experience in community development work. He was requested by residents of Orange Farm to go and live with them in order to help them. He co-ordinated the Orange Farm Environmental and Agricultural Projects (OFEAPRO).

Orange Farm is now formalising because people had no other place to go. They had to make a plan. At first most people came from other townships, mostly Soweto and Alexandra (see Connie's Story) but in the newer areas that have sprung up (see Annekie's story), most of the people have come from the farms. Many farm workers were evicted from the farms before the new land reform laws gave the white farmers problems.

This place is their own. That is a very important thing. We are very attached to the place. We will live here for the rest of our lives so we must make it comfortable and it must provide for the needs of the people. Orange Farm will be a model township. We are proud to prove to outside people that people who struggle do it as a reality that affects their lives. We have been denied ownership of land. Now we have what we have been dreaming for. Ownership is still being negotiated, but we have boldly taken ownership even before the new government was elected. We even want the mineral rights. We will struggle on until we have even the mineral rights. Not even a mining company is going to move us now. This makes us unique - we are very land conscious.

When we say 'The people shall govern' we do not mean to embarrass our new government. It is for the good of the people. All we need is for the government to recognise the legitimacy of land occupation.

RESOURCE 5

GETTING IT RIGHT: PLANNING FROM A SUSTAINABLE DEVELOPMENT PERSPECTIVE

Source: Developed from World Commission on Environment and Development (1987) *Our Common Future*, Oxford University Press, Oxford; and *New Ground*, Winter 1993.

Here are some principles for urban planning from a development perspective.

A. A successful long term urban development policy must:

1. Be balanced with an interrelated rural one. Policies at city, regional and national levels need to work together in a coherent and sound framework.
2. Recognise that the informal sector mobilises untapped resources, contributes to capital formation, and stimulates employment. Moreover, it is flexible in responding to local needs and demands, catering in particular to poorer households, which usually have nowhere else to turn. Governments should therefore give more support to the informal sector, recognising its vital functions in urban development.
3. Provide legal tenure to those living in 'illegal' settlements, with secure titles and basic services provided by public authorities.
4. Ease some building and housing regulations, and allow for a gradual improvement from informal building standards. Review current standards and technology for infrastructure. For example, sewerage systems that flush vast amounts of purified water are costly and wasteful of a limited natural resource.
5. Ensure that the land and other resources people need to build or improve their housing are available.

B. Authorities should:

6. Follow an approach of working with communities to devise *local* solutions to *specific local* problems. This process should fall within an overall framework that includes the other principles listed here.
7. Set up neighbourhood offices to provide advice and technical assistance on how housing can be built better and cheaper, and on how health and hygiene can be improved.
8. Plan and guide the city's physical expansion to anticipate and encompass needed land for new housing, agricultural land, parks, and children's play areas. Include an efficient and cheap public transport system in the integrated planning of public facilities.
9. Consider how public intervention could improve conditions for tenants and those living in cheap rooming or boarding houses.
10. Change housing finance systems to make cheap loans available to lower income and community groups. Facilitate loans and credit to small entrepreneurs, building co-operatives, and neighbourhood improvement associations.

RESOURCE 6

THREE WAYS TO USE $20 MILLION TO IMPROVE CONDITIONS IN A CITY OF 1 MILLION PEOPLE

Source: Adapted from World Commission on Environment and Development (1987) *Our Common Future*, Oxford University Press, Oxford, p. 252.

Option 1

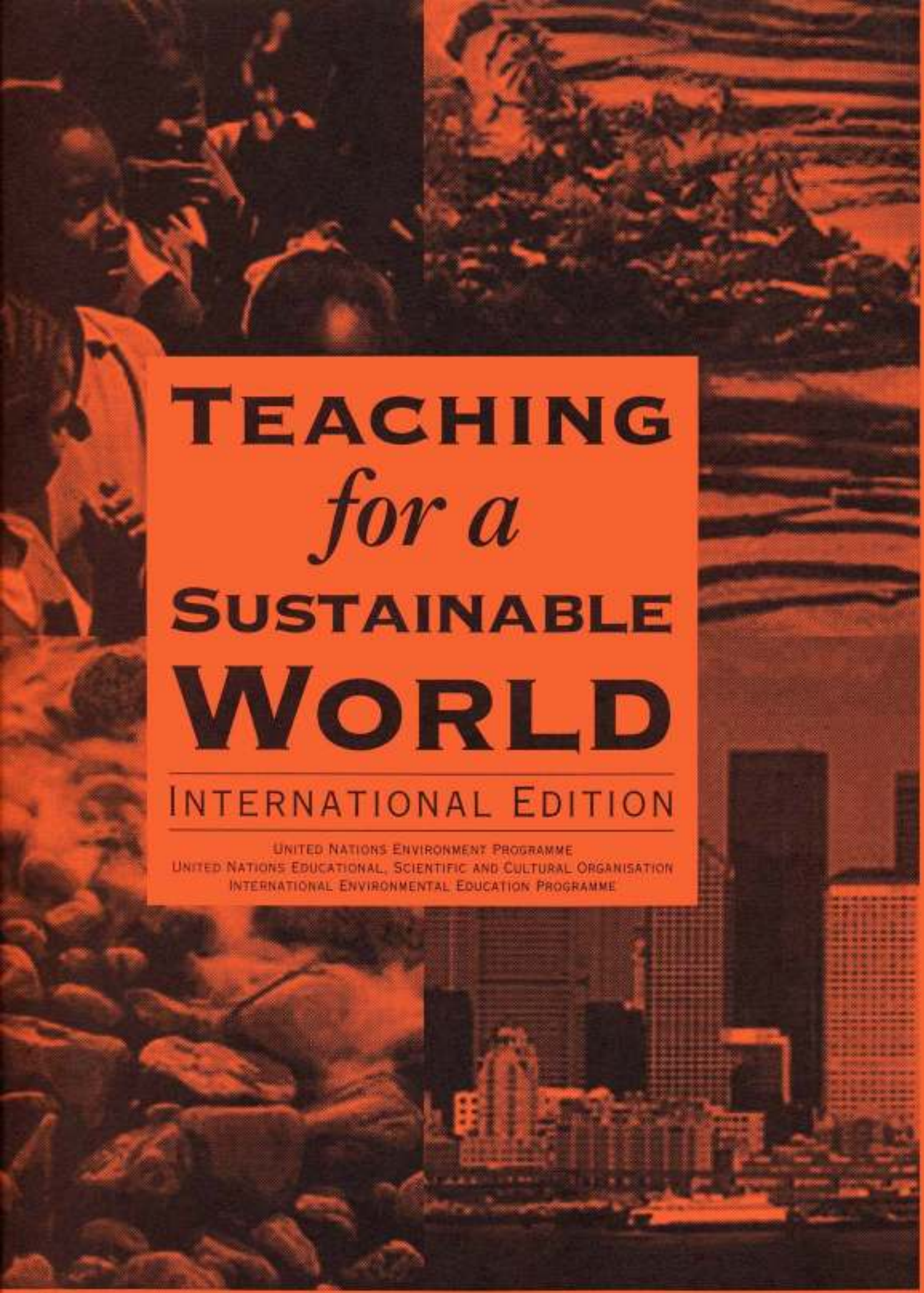
Build 2,000 public housing units for poor families (with an average of six family members), each costing $10,000. Conditions are improved for 12,000 people, but little cost recovery is possible for poor families. If the city's population grows at 5% annually, 630,000 new inhabitants will be added over 10 years, so only a tiny fraction of total population will have benefited.

Option 2

Establish a 'site-and-service scheme', whereby poor families are responsible for building their houses on an allocated site supplied with piped water, connection to a sewer system, and electricity, roads and drainage. At $2,000 per plot, this means housing for some 60,000 people - about 10% of the city's population growth over 10 years.

Option 3

Allocate $100, 000 to a neighbourhood organisation representing 1, 000 poor households (6,000 people) in an existing low income settlement. It chooses to improve drainage and roads, build a health clinic, establish a co-operative to produce inexpensive building materials and components, and reblock the settlement (i.e. establish a street grid pattern) to improve access roads and provide 50 new plots. With $10 million, 100 such community initiatives are supported, reaching 600,000 people and providing 5,000 new housing plots. Many new jobs are stimulated. The remaining $10 million is spent on installing piped water; at $100 per household, all 600,000 people reached.



MODULE 22

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID

WASTE MANAGEMENT *and* FUTURE PROBLEM SOLVING

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INTRODUCTION

This workshop looks at the serious problem of our growing waste. We are clearly able to produce more goods and to encourage more consumption these days, than we are able to dispose of the resultant waste and be judicious about our consumption habits. Perhaps the major problem with the problem of waste, is that we only seem to recognise what we have done *after the event*, when the effects are making themselves felt. With solid waste the effects are usually obvious - but only if you live near the waste dump. 'Out of sight, out of mind' is a tried and tested truism. With chemical wastes the effects are sometimes not nearly so obvious, and it may take years before people realise that there is a problem, and then more years before they can trace its source to cavalier disposal practices a decade or more ago.

This workshop explores both chemical and solid waste problems, the first through an activity that encourages a global view and the second through a 'Future Problem Solving' activity that takes a specific look at the city of Manila in the Philippines.

'Future Problem Solving' is a strategy that projects into the near future, describes a particular problem and then requires the participants to engage in a specific sequence of steps to decide what should be done about this problem. When the participants arrive at their solutions, they are, in effect, presenting solutions that should be implemented in the here and now so that the future problem they have been dealing with, never actually comes to be.

OUTCOMES

The activities in this workshop will assist participants to:

- acknowledge the growing problem of waste in our world community;
- recognise the role of society in generating this 'homegrown' problem;
- suggest ways of managing and solving this problem; and
- appreciate the value of a global perspective on local environmental issues.

WORKSHOP OUTLINE

The workshop consists of three parts:

Part 1 is an introduction to the problems of waste through a creative visualisation activity. It introduces participants to the severity of the problem by an indirect route.

Part 2 is more direct. It is a mini-lecture that deals with actual quantities of solid waste and outlines waste management strategies.

Part 3 presents a description of the waste problem that existed in the city of Manila, the Philippines in 1989, and asks the participants to engage in a Future Problem Solving activity to see if they can come up with suggestions that will lead to improvements with respect to Manila's waste problem.

Throughout the workshop a balance is struck between the physical problems of waste and the social problems that result.

MATERIALS REQUIRED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Future Problem Solving

OHTs may also be made of Resources 1 and 2.

RESOURCES

Resource 1: Feelings Checklist

Resource 2: Descriptors Checklist

Resource 3: A Fantasy Journey

Resource 4: This is Our Home

Resource 5: Waste Management - Metro Manila, 1989: Background Report

Resource 6: Waste Management - Metro Manila, 1989: Future Problem Solving

READINGS

Reading 1: Introduction to Solid Waste Problems

Reading 2: Future Problem Solving

1. Initiating Activity: Creative Visualisation

This activity uses imagination and visualisation to take participants on a fantasy journey. The objectives of the activity are to help participants become aware of and concerned for the quantity and type of waste, both solid and chemical, in our world community; and to accept that the 'foreign planet' is planet Earth and, therefore, that the judgements made about the inhabitants of this planet are judgements made about the inhabitants of Earth.

- Introduce participants to the 'Feelings Checklist' (Resource 1). Distribute copies and let them have a few minutes to look it over and to ask any questions about any of the feelings.
- Distribute the 'Descriptors Checklist' (Resource 2). Allow participants a few minutes to look it over and to ask any questions about any of the descriptors.
- Inform the group they are going on a fantasy journey. Ask them to make themselves comfortable. This may mean leaning back in the chair, or sitting, or lying down of the floor in a circle. Darken the room if that is possible.

Read the text in Resource 3 in a quiet, calm voice. The idea is to relax the participants and to have their imaginations take over. Suitable music may be played in the background to help create an appropriate atmosphere.

- Organise the participants into groups of three or four. Ask them to use the Feelings Sheet and the Descriptors Sheet to prepare a report that deals with the feelings they experienced as they journeyed over this foreign planet, and witnessed the behaviours of its inhabitants . The report should contain judgements about its inhabitants and a prediction for the future of this distant world.
- Distribute Resource 4, 'This is Our Home' to each group. Group members take turns to read the statements on Resource 4 aloud to each other. It will become clear very quickly that the 'distant world' they visited in their fantasy journey is Earth today.
- Use whole group discussion to assess whether or not the judgements made about the inhabitants of the foreign planet are accurate judgements about the inhabitants of Earth.

2. Introduction to Waste Problems

A. Mini-lecture

Use Reading 1 as the basis of a mini-lecture on the extent of waste in our 'throw-away society'. Three key points should be explained:

- the 'throwaway society' is a society that buys, uses and then throws away without a great deal of thought for the consequences;
- attitudes are critical to waste management, because unless people are disposed to consider the causes and consequences of waste, they will not be disposed to change their waste generating habits; and
- attitudes are difficult to change, because people simply get in the convenient habit of throwing away their waste without thinking. To change a convenient habit (buying and throwing) to an inconvenient one (buying less and disposing with care) is never easy.

B. Discussion

Use small or whole group discussion on the following questions which review the mini-lecture:

- What is meant by the term 'throwaway society'?
- What is thrown away and in what quantities?
- How did we get into a position where we throw away so much?
- What can you generalise about our attitudes to waste?
- How are these attitudes promoted / maintained?
- Are these attitudes appropriate? Why? Why not?
- How should we judge the attitudes of ourselves. Point to examples where these attitudes are appropriate or inappropriate.
- How easy is it for each of us to change our attitudes? How easy is it for others to change their attitudes?
- If we do not change our attitudes and our habits, what will our cities look and smell like in 10 years time?
- In what ways does the structure of society affect people's ability to change?
- You are a child born today. In 20 years time, when you have grown to adulthood the cities of the world have become almost unlivable. What will you say to your parents and grandparents who have contributed to this mess? What might they say to you?

3. Future Problem Solving: Waste Management, Manila 1989

In this activity, participants work in small groups (3-5) to explore solutions to solid waste disposal, in the city of Manila, through a Future Problem Solving activity. The activity is based on a set of Future Problem Solving worksheets which take approximately 90-100 minutes to complete.

A. Introduction

- Divide the participants into small groups and distribute the Manila Waste Management Report (Resource 5). Groups read the report. This resource could have been distributed in advance for pre-reading.
- Conduct any discussion on the report as is necessary to clarify any uncertainties.
- Tell the groups to put the report aside until the nature of Future Problem Solving has been explained.

B. Mini-lecture

Use Reading 2 and OHT 1 to explore the 5 steps in Future Problem Solving.

C. The Activity

- Distribute a copy of Resource 6 to each group.
- Allow 90-100 minutes for groups to complete the 5 steps in the Future Problem Solving activity.

D. Debriefing

- Ask for responses from groups in the form of a mini 'think tank' conference on solutions to the waste problems of Manila.
- Invite comments on the value of the two major strategies used in this workshop - creative visualisation and Future Problem Solving.

OHT 1

1. Identifying Possible Causes and Effects

2. Describing the Underlying Problem

3. Identifying Possible Solutions to the Underlying Problem

4. Describing the Best Solution

5. Outlining the Stages in Implementing the Best Solution and the Consequences of this Implementation

RESOURCE 1

FEELINGS CHECKLIST

Source: Unfortunately the source of this page is unknown, and so credit cannot be given where it is due.



RESOURCE 2

DESCRIPTORS CHECKLIST

able
accepting
ambitious
bitter
bold
carefree
careless
concerned
conforming
controlled
demanding
dignified
disciplined
efficient
energetic
fair
foolish
friendly
giving
greedy
happy
hard
helpless
imaginative
inconsiderate
insensitive
intelligent
kind
knowledgeable
lazy
loving
modest
naive
normal
organised
overconfident
petty
playful
powerful
proud
rational
realistic
reasonable
reliable
respectful
responsible
satisfied
selfish
sensible
silly
skilful
strong
stubborn
tender
thoughtful
tough
uncontrolled
understanding
vulnerable
wise

RESOURCE 3

A FANTASY JOURNEY

Make yourself as comfortable as possible ... relax ... take your mind of any worries or concerns that might be bothering you ... blot out any noises that might be going on outside the room ... and begin to breathe in and out in a steady fashion ... breathe in to the count of 1 .. 2 .. 3 and out to the count of 1 .. 2 .. 3, in 1 .. 2 .. 3 and out 1 .. 2 .. 3, in 1 .. 2 .. 3 ... now make your mind a blank ... fill it with a warm, soft darkness ... and relax ... slowly you become conscious of a gentle movement ... you are in a spacecraft, exploring outer space and other worlds... your craft is gently and quietly moving across the surface of a planet never visited by humans before ... its a living planet and habited ... but while you can see those who live there, they cannot see you ... your spacecraft is 'cloaked' with invisibility.

Your space craft sinks lower to the surface ... and through its enormous observation window you see signs of what you would call 'urban settlement' ...homes of the inhabitants are built very close together ... many are large and spacious ... these creatures obviously have a high standard of living ... and a high level of technology ... then you begin to fly over a poorer section ... the homes are run down .. in need of repair ... and many seem deserted ... the chemical sensor warns you of poisonous substances in the air and the soil ... you send the sensor to do a time scan ... and the results are strange ... for a long time in its history this section of land was clean and healthy ... then in a very brief period of time these poisons suddenly appeared ... almost as if they had been dumped there ... its disappointing and worrying ... but you move on ... and then you fly over forested mountains and hills ... you see many small streams coming together to form a large, majestic river ... you follow this river and see many farms and rural settlements along its course ... not unlike your home planet Earth ... these creatures are obviously advanced ... as the river gets closer to its mouth factories appear along its banks ... buildings that resemble oil refineries are common ... and again you are impressed by the level of development ... not unlike Earth in the late 20th century ... however, the chemical sensor display warns of the presence of carcinogens ... your computer breaks in to the computer of a large hospital ... the records show high rates of cancer and miscarriages ... more disappointing and more worrying ... the space craft moves on over a densely populated area of this land ... and you keep checking your chemical sensor display ... gradually the pattern of settlement becomes obvious ... the better off dwellings are in the cleaner areas ... the lower class dwellings are in areas that drive the chemical sensor display into a frenzy ... you memo your computer log ... 'On this planet the rich do well and the poor get poisoned' ...

Your craft moves on ... across a sea and over another land area of this planet ... once again you are over a rural area ... and you see farms and villages ... but the farms are neglected ... and five villages are completely empty of life ... 'ghost towns' ... why? ... the chemical sensor display registers high levels of heavy metals in the air and soil ... and there below you is the guilty party ... a large copper smelting plant, pumping out pollution ... you begin a memo to your computer log ... 'These inhabitants appear to want to kill themselves and their planet' ... but you cannot finish it ... you are overwhelmed by the problems you have seen ... you fly further ... over another sea ... and below you is a cargo vessel ... sailing peacefully ... you fly lower ... trying to regain your composure ... the sea is calm and blue ... twin suns are setting on the horizon ... beautiful ... and then your chemical display sensor begins to scream at you ... the ship is transporting carcinogenic polychlorinated biphenyls (PCBs) ... your computer breaks into the ships records and ... these PCBs are being exported! !! ... from a rich country to a poor country! ... because the rich country does not want them ... and the poor country needs money so it is being paid to take them ... you memo your computer log ... 'Here, they export ill health! and others import it!' ... it is difficult to stay calm ...you send your computer on a search ... and it uncovers a medical report that predicts a wave of chemical illnesses and chemical refugees in the near future ... 'chemical refugees'??? ...

It is clear this is a planet of barbarians and holds nothing for the civilised people of Earth ... the spacecraft gathers speed ... and moves off into outer space ... looking for other, more appealing planets to explore ... this one is a lost cause ... the warm, soft darkness fills your mind again ... relax ... relax ...

When you are ready ... come out of your fantasy journey and back into this classroom ... become conscious of the noises around you ... of the chairs and the desks, of the walls and the floor, and of your companion participants ... the lights are now coming on ...

RESOURCE 4

THIS IS OUR HOME

The descriptions in the Fantasy Journey are no less than examples of reality from our own times and our own planet. The feelings, behaviours and values you referred to in your discussion about the new planet are appropriate descriptors for humans and their treatment of planet Earth.

THE POISONED URBAN SETTLEMENT

Beginning in 1920 a partially completed channel (called Love Canal) between the upper and lower Niagara rivers in upstate New York came into use as a municipal and chemical waste dump. In 1953 the channel was filled in and homes and schools were built on and around the site. Over time chemicals buried in Love Canal began to surface and residents often complained of strange odours and substances. In 1976 a consultant discovered toxic chemical residues in the air and in the sump pumps of a good percentage of homes bordering the canal. High levels of carcinogenic polychlorinated biphynels (PCBs) were found in the storm sewer system ... in 1978 there was evidence of a high incidence of reproductive problems among women and high levels of chemical contamination in the homes, the soil and air ... Eventually all but 86 of the 900 families living in Love Canal were evacuated. *State of the World 1989*, p. 67.

A RIVER WITH FACTORIES AND BUILDINGS THAT RESEMBLE OIL REFINERIES

Along a 150 km stretch of the Mississippi River that winds from Baton Rouge to New Orleans there are 135 chemical plants and 7 oil refineries. Local incomes are primarily dependent on the jobs and incomes offered by these industries. But the region absorbs more toxic substances annually that do most entire states, including such dangerous substances as vinyl chloride, a carcinogen, and suspected embryotoxin. Several towns in this corridor have uncommonly high rates of cancer and miscarriages. *State of the World 1989*, p. 68.

FIVE VILLAGES EMPTY OF LIFE

The Polish government recently declared the village of Bogomice and four other villages 'unfit for human habitation' due to the extremely high levels of heavy metals in the air and soil deposited by emissions from nearby copper smelring plants. The government is encouraging villagers from this region to resettle elsewhere by offering compensation. *State of the World 1989*, p. 68.

THE EXPORT OF CHEMICAL WASTES

Thousands of tons of US and European wastes have already been shipped to Africa and the Middle East. It costs from US$250 - $350 per ton to dispose of municipal and industrial wastes in the US, but some African countries will accept it for as little as US$40 per ton. In 1987 and 1988 Italy dumped 3,800 tons of toxic waste in the small Nigerian port of Koko. PCBs, the chemical that put Love Canal on the map, made up at least 150 tons of this dumping. *State of the World 1989*, p. 70

THE RICH DO WELL AND THE POOR GET POISONED

The poor of the cities of the third world face the environmental problems of underdevelopment along with those of overdevelopment. The shantytowns of the poor are found in areas unwanted by the well off: on floodplains, on steep slopes, around - and sometimes in - garbage dumps, containing unknown quantities of toxic materials, and near hazardous industrial zones - such as at Bhopal. In USA the poorer the neighbourhood and the darker the skin of its residents, the more likely it is to be near a toxic waste dump. More than half of all black and Hispanic Americans live in communities with at least one toxic waste site. *State of the World 1990*, pp. 147 - 148.

A Wave Of Chemical Illnesses And Chemical Refugees

In 1976 an explosion in a small chemical plant in Seveso, Italy, led to 800 people being evacuated from their homes for more than one year. In 1987 the newspaper *Pravda* stated the industrial city of Ufa in the Urals had become 'unfit for human habitation'. The population of Ufa is nearly 1 million. The Nigerian government is making plans to evacuate the 5000 residents of the port city of Koko. Already Bogomice and four other villages in Poland have been evacuated. In Bhopal, India, in 1984 the Union Carbide pesticide plant accidentally released a cloud of deadly methyl isocyante over the town, killing 2,500 and sending more than 200,000 fleeing for their lives. As many as 100,000 people are still suffering from such effects as blurred vision, lung diseases, intestinal bleeding, neurological and psychological disorders. The 150 km stretch along the Mississippi from Baton Rouge to New Orleans has been referred to as 'the national sacrifice zone' and the pollution has been described as "a modern form of barbarism'. *State of the World 1989*, pp. 68 - 70.

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RESOURCE 5

WASTE MANAGEMENT - METRO MANILA, 1989: BACKGROUND REPORT

Source: Extracts from a Department of Environment and Natural Resources Report, Manila, Philippines, 1989.

EXISTING CONDITIONS

The current system for the collection of solid waste in Manila is unreliable because of a number of local conditions. Principally, the major impediment to a more reliable routine collection of solid wastes is caused by the extensive salvage operations both at the point of collection, and while the refuse is being transported to the existing dumps. Another major impediment to routine collection is caused by the monsoon season when the torrential rains cause flooding of the streets and severe deterioration of the paved roads so necessary for modern refuse collection trucks.

Another major problem interfering with better collection practices involves inaccessibility to the refuse sources because of the extensive areas where squatters have established themselves and by the many narrow, poorly maintained streets in many of the communities.

A reliable routine collection system can only be established in a community when the access roads to the landfills are properly designed and maintained. In many of the landfills, the roads are so poor that the disposal sites are inaccessible to the collection vehicles during storms.

In a metropolitan area as large as Metro Manila it is grossly inefficient for the collection vehicles, which in many cases are rather small, to travel long distances to the disposal sites. There are no transfer stations available to the collection vehicles at this time.

All of the existing solid waste disposal sites are totally unacceptable. All existing landfills are poorly located with respect to groundwater pollution and have been located in areas where it is impossible for the operations personnel to provide the daily earth cover necessary for an acceptable landfill operation. The existing landfills create excessive odours, rodent and insect breeding, smouldering fires, and groundwater pollution. The best description of the existing disposal sites would be to classify them as open dumps rather than sanitary landfills. In a properly operated sanitary landfill, the area would be fenced and the access gate would be serviced by either a series of scales for weighing the incoming tonnage or by a gate house where an estimate could be made of the yards of refuse to be disposed. If this were done, then an appropriate charge could be made to the users of the landfill to recover the capital and operating costs for the landfill site.

The lack of any attempt to provide an earth cover of each day's accumulation of refuse, allows storm water to infiltrate into the refuse resulting in an anaerobic decomposition of the refuse with resulting odour from the gas generated. Lack of cover also allows fires to self-generate. The lack of cover also allows the proliferation of rodents, flies and other vermin which can then migrate into the neighbourhoods adjacent to the fill.

INSTITUTIONAL PROBLEMS

The environmental problems associated with solid waste management are caused by long standing institutional weaknesses. A lack of financial resources could be considered the underlying cause. There is also a lack of discipline related to littering also exists among many in the populace.

Under the Metro Manila Authority (MMA), the governing board is composed of the 4 cities and 13 municipalities which comprise Metro Manila. The concept of the MMA as a strong element of regionwide government is not necessarily supported, however, by all the jurisdictions represented on the MMA governing board.

PROPOSED GUIDELINES FOR SOLID WASTE MANAGEMENT

The proposed plan envisions the establishment of two new landfills, one to serve the northern portion of the city, and the other to serve the southern part of the city. In addition to the two landfills, the proposed plan calls for the construction of approximately 5 transfer stations.

In regard to the construction of transfer stations, the stations should be designed to provide storage of refuse in a pit so that the collection vehicles can be promptly moved in and out of the station. If refuse storage is not provided, there must be an adequate number of transfer

vehicles available at all times to accept refuse directly from the collection vehicles.

The new sanitary landfills should be located in areas where there is no useable groundwater under the landfill site. Another major consideration would be provision for adequate buffer areas between the landfill site and other commercial and residential developments. Also, access roads should be adequate for the heavy axle loads associated with heavy collection vehicles and the roads should be wide enough to accommodate the refuse vehicles without leaving the paved surface. Once the new landfill sites are acquired, it would be preferable to erect a fence around the entire property to prevent access by squatters or scavengers.

The following list of conditions are recommended for the operation of a sanitary landfill which will not cause any nuisance to the community:

1. A daily cover of earth of approximately 15 to 30 cms in depth must be provided over all refuse at the end of each day.
2. Each day, as the refuse cells are constructed, grades must be set to ensure drainage of storm water.
3. A water truck or a number of water trucks are needed to control dust and to help compact the material used for internal access roads.
4. Wet weather dumping areas must be constructed to provide access in and out of the site and dumping area during the rainy season.
5. After completion of the landfill, all exposed slopes and the top of the landfill should be covered with about 1.4 metres of soil. A cover of this thickness would also provide adequate fill to support trees and shrubs.
6. When a significant depth and quantity of refuse has been deposited in the landfill, wells and gas trenches should be constructed for withdrawal of the methane gas which is produced anaerobically from within the landfill. If the landfill is properly covered with dirt each day and the slopes are properly covered, the gas withdrawn on the landfill will contain from 400 to 450 BTU cubic foot. Gas of this quality can be burned in a gas engine or can be burned in a steam generating plant for producing electricity.
7. If two new landfills are to provide disposal for the 8.5 million people in Metro Manila, thousands of tons of refuse will be deposited in each landfill each day. This will require a substantial number of units of heavy equipment.

WATER QUALITY MANAGEMENT

The major river systems in the Metro Manila Region (MMR) are the Pasig-Marikina River, the Malabon-Tullahan River and the Paranaque-Zapote Rivers. Manila Bay and Laguna Lake (Laguna de Bay) are the two bodies of water into which these rivers flow.

The rivers are so highly polluted from the discharges of domestic and industrial wastewater that they can be termed as being biologically dead except for the upstream portion of the Marikina River. Most of the pollutants discharged in the region's river systems eventually end up in Manila Bay and the remainder in Laguna Lake.

EXISTING ENVIRONMENTAL CONDITIONS

Major Rivers: The Pasig River flows east to west through Metro Manila for 25kms., crossing through the City of Manila to Manila Bay. The river has three principal tributaries: the San Juan River, the Marikina River and the Napindan River. The watershed area covers about 635 sq.km. but a large portion of the watershed is outside Metro Manila.

It has been estimated that 70 percent of the organic pollution in the Pasig River is due to domestic waste and 30 percent to industrial waste discharges. Out of over 300 industrial firms along the banks of the Pasig River system, about one-half have been found to be polluting the water in varying degrees. River pollution is further aggravated by oil spills, from about 300 gasoline stations, several oil depots, and barges, tanks and boats docking in the area.

The most polluted river system in the country today is the Malabon-Tullahan River system. The pollution of the Malabon-Tullahan River system is estimated to be about 58 percent from domestic waste (both liquid and solid waste) and 42 percent from industrial waste. There are about 1000 industries along the river banks and about 11,000 squatter families within its watershed.

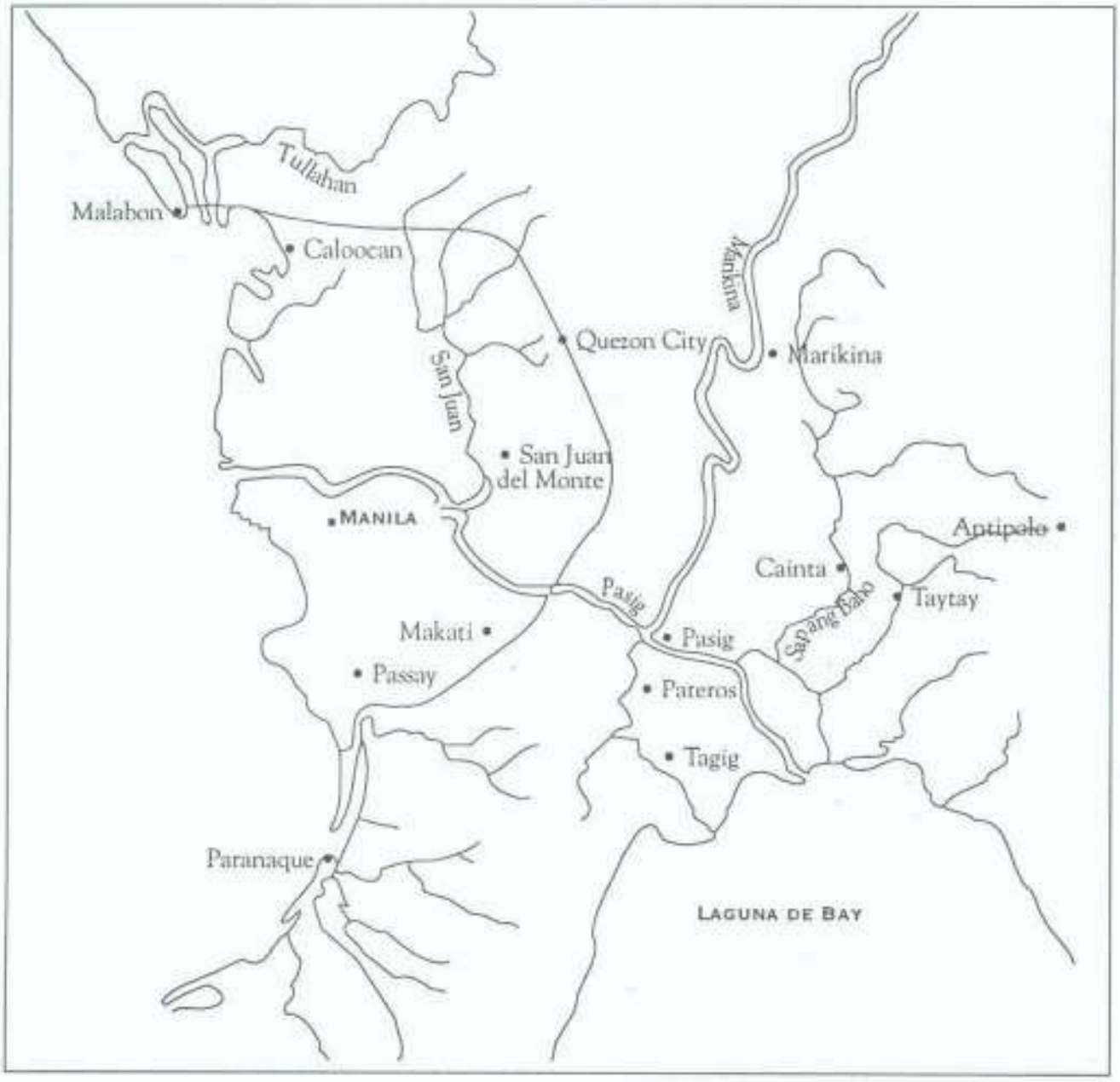
Both the Pasig-Marikina and the Malabon-Tullahan River Systems have been significantly affected by the vast quantities of silt deposited in the river beds, which causes regular flooding due to river bank overflows during intense rains. Siltation is caused by soil scoured from deforested upper watershed areas and by bank erosion.

Manila Bay: Most of the pollutants generated in the study area, eventually end up in Manila Bay. The Bay is therefore the recipient of domestic and industrial waste discharges, agricultural runoffs and oil spills.

One of the major causes of the pollution in the bay is the lack of adequate domestic wastewater sewerage facilities. Only about 15 percent of the population of Metro Manila is presently sewered.

Laguna Lake: The increase in direct discharges of domestic and industrial wastes, and agricultural runoff, plus pollution carried in by tributary rivers, has degraded the water quality of Laguna Lake over the years.

In the last 20 years, the watershed area of the lake has become one of the most heavily urbanised and industrialised areas in the region.



RESOURCE 6

WASTE MANAGEMENT - METRO MANILA, 1989: FUTURE PROBLEM SOLVING

Source: The source for the creation of this problem and for the data in Resource 5 was a report from The Department of the Environment and Natural Resources (DENR), Manila.

FUTURE PROBLEM SOLVING

I:	Identifying Possible Causes and Solutions	20 minutes
II:	Describing the Underlying Problem	15 minutes
III:	Identifying Possible Solutions to the Underlying Problem	20 minutes
IV:	Describing the Best Solution	15 minutes
V:	Outlining the Steps in Implementing the Best Solution and the Consequences of this Implementation	20 minutes

STATEMENT OF THE PROBLEM

It is the year 2000, and for the first time in its history the population of Metro Manila did not grow ... instead it shrank. Family after family was leaving Metro Manila in search of better places to live and work.

The present problem had its beginning in the '70s and '80s. As Metro Manila grew, it grew faster than it could be serviced. Now in the year 2000 there are many problems in the city, but the overwhelming one is waste.

At the end of the '80s Metro Manila was generating 4,000 tonnes of waste a day and collecting only 3,600 tonnes a day. Over a week the uncollected 400 tonnes a day became 2,800 tonnes. Over a month 12,000 tons were uncollected.

As the 10 years passed from 1990 to 2000, more and more problems emerged. As the piles of garbage increased, some streets became impassible except on foot. The smells that rose from these piles were almost impossible to live with. In the monsoon season the rubbish was washed about the streets and eventually into the stormwater drains where it clogged the drains. When this happened the floods that had plagued Metro Manila in the '80s became far more destructive in the '90s. In the end, it was only the rats, the fleas and the flies that benefited from the growing mountains of waste.

But it wasn't just the streets of the city that were suffering .... the waters of Metro Manila were dead or dying. The Pasig-Marikina River, the Malabon-Tullahan River and the Paraneque-Zapote were all biologically dead. Manila Bay and Laguna de Bay were increasingly polluted and it was now unsafe to eat fish caught in either Bay.

The sources of this pollution are both domestic waste and industrial waste. Along the Pasig River there are over 400 gasoline stations and several oil depots. In the watershed of the Malabon-Tullahan there are over 16,000 squatter families. In addition deforestation in the watersheds of the rivers has led to increased run off, a siltation of the rivers and consequently a reduced riverflow.

Finally some of the industrial refuse that finds its way into the rivers and bays are the heavy metals of copper, zinc, cadmium, silver and mercury. A number of people had died as a consequence of eating fish that had accumulated those heavy metals in their flesh.

Metro Manila was suffering from all this waste. The rivers were dead, the bays were dying, and many of its streets were smelly and ugly. It was as if the city had contracted leprosy. Proud Metro Manila needed to be re-vitalised.

Step I

Identifying Possible Causes and Effects

Now that you have thoroughly read and discussed the situation, it is time to consider the many problems and difficulties related to it. Begin by brainstorming the many factors that may have caused the situation or that may result from it. Select the TEN that you think are the most important and write them below and on the following pages. Choose your words carefully, using statement (rather than question) form.

Rules for Brainstorming

1. Criticism is ruled out.
2. Free-wheeling is welcomed. The wilder the ideas, the better. Off beat and silly ideas may trigger practical breakthroughs that might not otherwise occur.
3. Combination and improvement are sought. Group members are encouraged to combine and 'hitchhike' ideas.
4. Quantity is wanted. The larger the number of ideas, the greater the chance of reaching the best solution.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Step II

Describing the Underlying Problem

Based on your list in Step I, identify an underlying problem of major importance, using the outline below. Your problem should clearly explain what you want to do, and why it should be done.

How can we _____

_____

(state what it is you wish to achieve)

because _____

_____

(state your reasons)

so that _____

_____

(state the benefits/losses that will follow for the different groups with a stake in the problem.)

Step III

Identifying Solutions to the Underlying Problem

Brainstorm as many solutions as you can to your underlying problem. Choose your TEN most promising solutions to list below. Write each solution so that it describes WHO will carry out WHAT action, HOW it will be done and WHY it will solve the problem, e.g. The people (WHO) of Manila must ..... (ACTION) by ..... (HOW) and in that way ..... (WHY it will solve the problem).

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

8. _____

9. _____

10. _____

Step IV

Describing the Best Solutions

Using your 10 solutions in Step III, outline the Best Solution to the underlying problem. Your Best Solution might link three or four or more solutions from the 10 you have listed.

Step V

Stages

Outlining the Stages in Implementing the Best Solution and the Consequences of this Implementation

Outline the stages in putting this solution into practice. Do not use any more than 5 stages. Also identify at least one consequence, good or bad, that would follow each stage.

READING 1

INTRODUCTION TO SOLID WASTE PROBLEMS

The fantasy journey was an introduction to the problems of chemical waste, but the 'throwaway age' we live in brings with it waste problems of another nature. The garbage, or solid waste, that is collected from outside the front doors of our homes, offices and factories once or twice a week is evidence of how much we throw away.

In the USA approximately 2000 new products are created each year, which makes a significant contribution to the solid waste produced. The annual throwaway list in the US includes 52,000,000,000 cans; 30,000,000,000 bottles and jars; 4,000,000 tonnes of plastic; 8,000,000 TV sets; 7,000,000 cars and 30,000,000 tonnes of paper.

The rapid increase in the use of materials as nations have industrialised and modernised, has been accompanied with a correspondingly rapid increase in the output of garbage. Apart from a growing quantity of waste there is also concern for its 'quality'. Modern consumer products contain toxic substances that create problems of disposal. Old car batteries contain heavy metals such as lead, mercury and cadmium. Household cleaners, solvents and paints, and the pesticides and weedicides that we use on our suburban gardens, may contain hazardous chemicals.

Over the last 20 years many nations have come to realise that the traditional reliance on landfill as a method of disposal is not always appropriate. Solid wastes that go directly to landfills can create their own set of problems. In the first place landfills take up space that in most cities of the world is very valuable. Secondly all landfills eventually 'leak', releasing into the soils and groundwater a toxic mix of rainwater and decomposing waste.

The UN Environment Program has the following preferences for waste management:

1. Source reduction - i.e., avoiding waste generation in the first place
2. Direct reuse of products
3. Recycling
4. Incineration, with recovery of energy from the heat generated
5. Landfill

In addition to these five, some waste management authorities have a program of Landfill Gas Utilisation in operation. Landfill gas is usually 60% methane and if this is extracted from the landfill it can be marketed.

When faced with management problems, local and national governments tend to deal with the problem by going from landfilling to incinerating. Mass burn incinerators can be very expensive to establish and are four to five times more expensive per tonne ($70 - $80) than landfill per tonne ($15 - $16). The construction of an incinerator can lead to a backlash from local residents and because of maintenance shutdowns and the fact that some waste cannot be burned, usually only reduce total waste by about 50% by volume.

Incinerators are expensive in terms of energy. Though they may produce heat energy from burning, the amount recovered is considerably less than that needed to produce the items they burn. Recycling paper, some plastics and aluminium saves approximately twice as much energy as incineration. Incineration has other problems - ash from incinerators that goes to landfills may contain toxic chemicals that can leach into the groundwater; nitrogen, sulphur oxides, carbon monoxide, acid gasses, dioxins, carcinogens and heavy metals can be pumped into the air to the detriment of the people.

The first step in cutting waste is reduction. By using less material in the first place waste is reduced. However, such a strategy does not always suit the 'consumer'. Many consumers want to buy, use, discard and to be impressed by packaging and its convenience. In 1988 packaging constituted 21% of domestic waste in the Netherlands while it was up to nearly 30% in what was then West Germany. Consumers frequently prefer 'new' to 'repaired' - though in many instances it must be admitted that we are advised to buy a cheap, new one rather than have an expensive repair done.

Another major step in cutting waste is recycling. We are told that even without changes to products or industrial practices, half of the contents of the average garbage bin can be easily recycled. In Sydney, Australia, for example, enough glass to make 2,000,000 bottles, enough metal to

build another Harbour Bridge and enough paper to save 1,000,000 trees from destruction, are discarded and buried in landfill sites every year.

Yet with all this potential, recycling ventures are not especially successful. The government, the community and industry have all been apathetic at times and while there has been much rhetoric, there has not been the required attitude change.

A large part of the problem is that since the industrial revolution we have accepted that waste is a by-product of progress, and that we have a right to have our wastes removed at minimal cost and inconvenience. Unless we have a change of heart, waste will continue to be a growing problem and the notion of a sustainable society that will preserve the environment for future generations will remain nothing more than a load of rubbish.

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READING 2

FUTURE PROBLEM SOLVING

Problem solving is a strategy that is dealt with extensively in the literature on Social Studies, Maths, Science, Art and other subject areas. The basic steps of the strategy are well known, but vary somewhat from writer to writer. The model that is presented here is a modified and simplified version of a Future Problem Solving Strategy that is dealt with fully in: Anne Crabbe (1985) *The Coach's Guide to Future Problem Solvers Program*, St Andrew's College, Leuringberg, N.C. 28352, USA.

There are five steps in this particular strategy, once the problem has been stated. Each step has a recommended time for its completion.

STATEMENT OF PROBLEM

The problem is set in the near future. It is established by examining the causes and effects that are interacting to create a current problem, and then extrapolating these to approximately 10 years hence. The problem is then either 'out of hand' or getting that way, and the participants are asked to set in train a series of steps that will rectify the problem, and that should have been set in train 10 or so years back, in the present time.

I Identifying Possible Causes and Effects (20 minutes)

This is a freewheeling session in which teams explore what the causes of the problem are, or might be, and what the effects are, or might be. It is, in a sense, a 'familiarisation tour' of the problem. All ten spaces should be completed as this ensures that the possible causes and effects have been well thought through.

II Describing the Underlying Problem (15 minutes)

This is a less freewheeling and more disciplined section. The teams need to synthesise the ideas dealt with in I above to arrive at what they consider the nub of the problem. The first two parts to this section are self-explanatory but the final part (*so that*...) needs to address the pros and cons of their goals, e.g.,

- *How can we* educate the people to reduce the amount of waste in Manila
- *Because* the city is dying under its own weight of rubbish
- *So that* those who live in Manila will make the effort to change their habits and will put more stress on health, hygiene and city appearance.

III Identifying Possible Solutions to the Underlying Problem (20 minutes)

This is once again a freewheeling session in which the teams generate solutions to their chosen underlying problem. The test here is whether or not they stay on the task and that all their possible solutions are consistent with the problem they have specified. Once again there are 10 spaces to ensure the problem is thought through and that teams do not stop at the first three or four solutions. The purpose of steps I and III is to force the teams to generate as many ideas as possible in the hope that one or more of these ideas may trigger a realistic solution to a genuine problem. It is important in this step that the teams specify WHO, WHAT, HOW and WHY. It is important to note, for example, that all the WHOs are not 'the government'. Clearly any complex problem requires contributions from a variety of individuals and agencies, and a listing of the WHOs involved should preclude one or two agencies being named to do all the work.

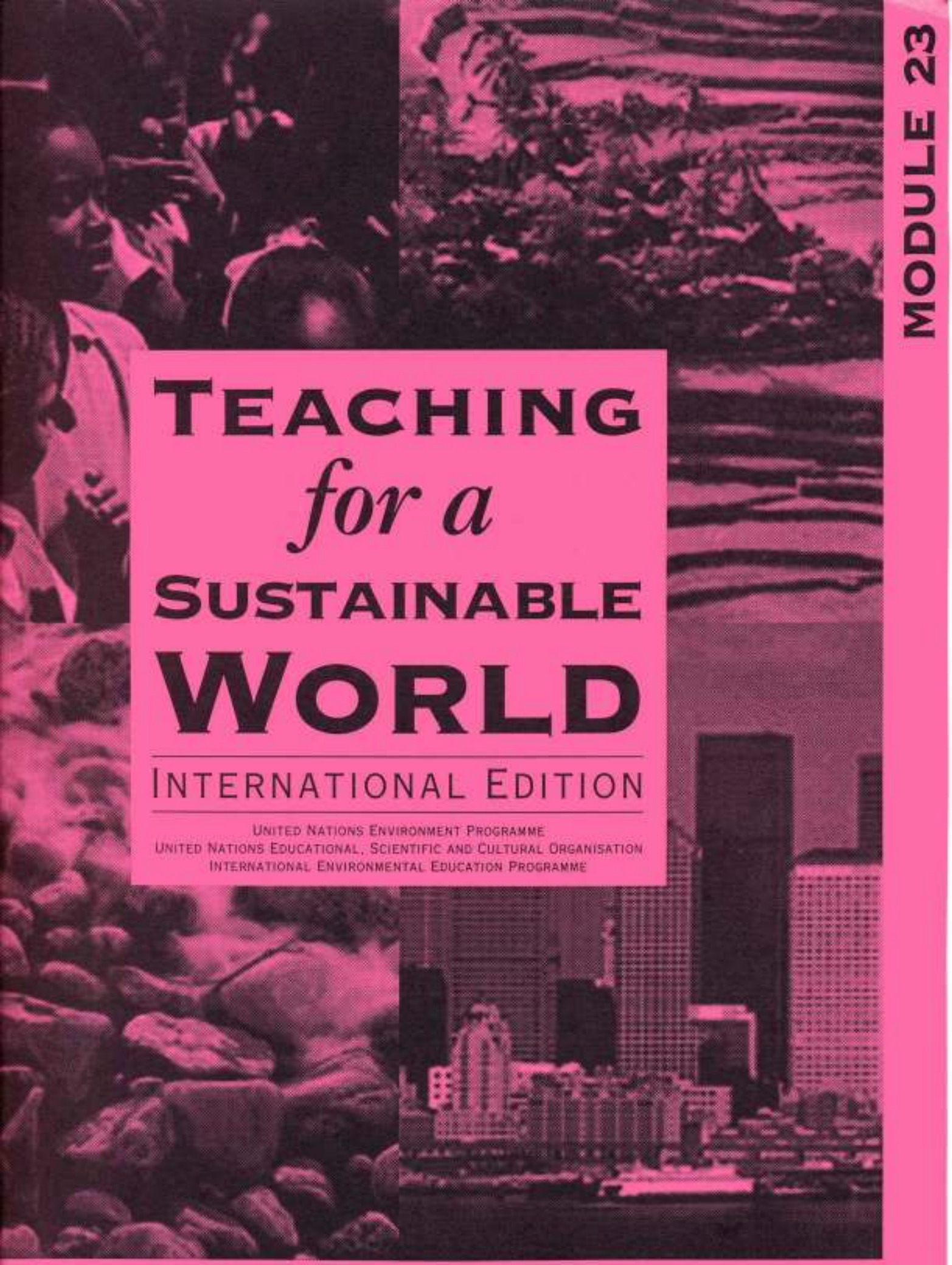
IV Describing the Best Solution (20 minutes)

Once again the teams are required to synthesise their ideas and to express their best solution as succinctly as possible. Their consistency of thinking is tested here and the best solution must clearly address the underlying problem summarised in II.

V Outlining the Stages in Implementing the Best Solution and the Consequences of this Implementation (20 minutes)

In this step the teams need to agree on the sequence of steps needed to bring about a full implementation of this solution. This sequence is dealt with by the column headed STAGES. Here the teams need to show what they would do first, second ... and fifth, so that their solution would stand the best chance of being accepted. At the same time as this sequence is being worked on, the teams need to consider the consequences that might flow from the actions involved in each of the STAGES. If, for example, the first stage of the implementation was: *Large fines for anybody caught littering* then the consequences might be so negative that the rest of the stages could not be brought into operation.

On the other hand, if a different first stage was implemented, then positive consequences might occur and the rest of the stages would stand a better chance of success.



MODULE 23

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID

ALTERNATIVE TECHNOLOGY

JAN OLIVER
EDWORKS
AUSTRALIA

INTRODUCTION

This workshop explores questions about the application of appropriate technology to development proposals in the South. Many development programmes have been based on the conventional theory that large capital-based schemes will have a 'trickle down effect' on the rest of the economy and benefit all. Recently, the success of small-scale local programmes using available resources to benefit more people has forced a review of economic development projects. This workshop seeks to develop concepts and explore misconceptions about appropriate technology.

OUTCOMES

The workshop aims to increase participants' understanding of appropriate technology, the impacts of technology on the quality of life and why some technologies can be better than others. Specifically, the workshop promotes:

- understanding of the role of technology in development;
- critical awareness of appropriate and inappropriate projects;
- development of a set of guidelines to assess appropriate technology and the long term impacts on society and the environment; and
- skills in evaluation and communication.

WORKSHOP OUTLINE

There are four main activities.

1. Focus Activities: Concepts and Time Capsules

Participants brainstorm about the meaning of technology, and check their answers against a list of definitions. Small groups of participants examine a box of Time Capsules, with items representing various technologies. Then pairs attempt to convince each other of opposing views about 'appropriate technology' concepts before discussing the importance of technology for all.

2. Evaluating Appropriate Technology

A mini-lecture provides the basis for discussion using focus questions.

3. Working Together

A series of case studies and a co-operative exercise to consider the implementation of projects using various levels of technology, and if such projects meet a set of given criteria about appropriate technology.

4. Curriculum Applications

Participants evaluate a teaching activity based on a role-play game and suggest the suitability of the activity for their own situation.

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Definitions of Technology

OHT 2: Concepts about Alternative Technology

OHT 3: Criteria for Assessing the Use of Appropriate Technology

RESOURCES

Resource 1: The 'Limits to Growth' Perspective

Resource 2: Case Studies of Various Types of Technology

Resource 3: Matrix for Assessing Appropriate Technology

Resource 4: Teaching Activity: Suka-Hollus Game

B) TO OBTAIN

Activity 1: Time Capsule Items

Each group requires a box or other appropriate container with some of the following items:

- Picture of plough pulled by oxen
- Carved animal, e.g. elephant
- Bottle of antibiotics or other health remedy
- Piece of hemp/sisal rope or string
- Can opener
- Wooden or glass ornament
- Tree seedling in tube or packet of flower seeds
- Piece of basketware
- Wooden spoon or kitchen knife
- Piece of electrical cord or electric jug cord
- Car sticker, e.g. Save the whales, Stop logging, etc.
- Plastic bag or wrapping paper
- Computer disc or typewriter ribbon
- Picture of television set or car or large machine
- Report or advertisement relating to small-scale development (e.g. newspaper or magazine article)
- Coin
- Can of fish
- Other items related to different technologies used in the participants' area.

ADDITIONAL READING

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ACTIVITIES

1. Focus Activities

- Lead a brainstorming activity about the meaning of technology. Then display OHT 1, a list of some definitions, and ask participants to discuss and agree on which definition phrases are appropriate.
- Divide participants into groups, and supply each one with a time capsule.
- As they examine each item, the group is to imagine they are digging up the capsule in 50 years.
- Ask the groups to discuss the following questions:
  - Will the items still be in use?
  - Are they still recognisable?
  - Why or why not?
  - Which originated as a result of high technology?
  - Which was used by people in Less Developed Countries/South?
- Display OHT 2 about the concepts of alternative technology.
- Ask participants to discuss the following:
  - Do they agree what is 'appropriate' technology?
  - Does technology surround all worlds today?
  - How appropriate is this technology for our lives?
  - Does everyone in our own country have access to such technology?

2. Evaluating 'Appropriate Technology'

Mini-lecture

- Use the information on Resource 1 to explore the issues surrounding appropriate technology. Issues for review include:
  - Is small beautiful?
  - Do Less Developed Countries have to have the same development projects and aspirations as More Developed Countries?
  - Who will the technology help?
  - How can new technologies be evaluated?
  - If a choice has to be made about the adoption of new technologies (because of funding availability), how is this choice made?
  - Who makes the choice? For example, would the development of a malaria vaccine be more important than a project to increase food production?

3. Working Together

No widely accepted quantitative method for choosing between alternative technology development proposals has been developed. However, some criteria are recommended by UNEP (OHT 3).

A. Case Studies

- Display OHT 3. Outline these criteria to participants.
- Divide participants into pairs and provide each with a copy of Resource 2 and Resource 3.
- Ask them to read through the Case Studies in Resource 2 and select five projects of interest to them. They now have to make an assesment of each of the five, recording their viewpoints on the matrix in Resource 3. Reference can be made to the criteria in OHT 3.

- Lead a discussion about the types of appropriate technology used in these projects and the results of participants' assessment.

B. Schemes in a Fishbowl

This is a co-operative exercise to consider how best to implement new, small scale developments.

- Divide participants into several large groups, who form the inner circle. Each group also has an outer circle, say, of five people. Groups sit in two circles, with most being in the inner circle.
- Each inner circle has ten minutes to discuss how best to implement a project involving appropriate technology.
- Groups could be allowed one of the following approaches:
  - a village project
  - a national government project
  - a non-government organisation project.
- Reference can be made to OHT 3.
- The outside circles watch and listen in silence. Their task is to count how many participants joined in the discussion, notice how many looked as though they wished to say something but did not, and keep track of who interrupts and who is interrupted.
- When the discussion has put forward several points, the outer circles then report on what they saw and heard.
- The groups exchange seats and repeat the process.
- Lead a discussion with all participants, focusing on the following:
  - What hindered discussion?
  - What helped it?
  - Did participants accept other people's opinions?
  - Is it now possible to reach a consensus on which is the best way to approach appropriate technology?
  - How would the people involved in adopting such technology reach agreement about a project or a choice of projects?
  - How can people in the more developed countries get an opportunity to consider adoption of appropriate technology?

4. Curriculum Applications

This concluding activity asks participants to evaluate a teaching activity on the use of appropriate technology and suggest how it can be adapted to their areas of teaching.

- Distribute a copy of Resource 4 to each participant and tell them it was developed for a Year 9-10 class.
- Ask participants to consider:
  - If the game activity is suitable for Year 9-10 students.
  - What adaptations are required to use the activity in other subject areas?
  - If the activity contradicts or helps explain the concepts of appropriate technology.
- Ask participants to outline the measures they would take to implement the activity in their own teaching situation.

OHT's

OHT 1

DEFINITIONS OF TECHNOLOGY

Which definition matches your feelings about 'technology'?

- the creation of new products and processes that are supposed to improve our survival, comfort, and quality of life
- material technologies are the recipes for making things
- social technologies are recipes for guiding purposive interaction between people
- the interrelationship between patterns of human living and machinery and methods of using resources
- includes the links between science, environmental degradation and adverse forms of social and economic organisation
- devices which are virtually unlimited, pervasive and with the capacity to reduce costs and improve product characteristics
- the branch of knowledge that deals with science and engineering or its practice as applied to industry
- ways of exploiting some of the biophysical elements of the environment and using them as resources
- the devices and processes leading to their development and surrounding their use which contributes to sustaining Earth.

OHT 2

CONCEPTS ABOUT ALTERNATIVE TECHNOLOGY

- When development schemes are imposed on people and they do not participate in the identification, planning, construction and maintenance of projects, these schemes frequently fail, being inappropriate to local needs and resources.
- Initiatives need to consider the social, cultural and political aspects of change, not just the physical provision of a new road or irrigation canal.
- Where aid is 'tied' by a bilateral donor, the choice of technologies is limited to those available through the donor nation.
- Assessors of development projects may consider that the 'trickle down' of capital intensive projects may be more cost effective than providing basic needs.
- On a world scale, technologies being developed today are predominantly either military technologies or those that offer profits to entrepreneurs.
- Technology develops from known scientific laws and theories, not from the ground level up.
- Many technologies which initially perform well either break down and leave a technology gap or begin to generate unforseen side effects.
- Technology is double edged. An increase in technology sometimes increases environmental impact, sometimes decreases it.
- The key problem with low impact alternative technologies is adoption on a wide scale.

OHT 3

Criteria for Assessing the Use of Appropriate Technology

UNEP criteria for appropriate technology include a preference for:

- technologies which enhance the quality of life rather than merely allow an increase in the consumption of goods
- production technologies which require satisfying creative work rather than boring routine labour
- production technologies in which machines are subordinated to, rather than dominate, the lives of people
- technologies based on communal, rather than individual, use of goods and services
- technologies which blend with, rather than disrupt, traditional technologies and the fabric of social life
- technologies which increase, rather than diminish, the possibility and effectiveness of social participation and control
- technologies which facilitate the devolution of power to the people, rather than its concentration in the hands of elites.

RESOURCE 1

THE 'LIMITS TO GROWTH' PERSPECTIVE

Source: This reading is a summary of two viewpoints: What is Development?, *Geographical Education* 7(2),1994, and Technology as a Trojan Horse, *New Internationalist*, June 1992.

Does Development Depend on Technology?

It is remarkable that the extensive literature on Third World development still shows little sign of having recognised that for resource and environmental reasons, as it is conventionally conceived, development is impossible. It is taken for granted that the goal for development is to rise to the industrialised-affluent-consumer lifestyles characteristic of the rich countries. Since the 1960s, however, a substantial 'limits to growth' literature has emerged, arguing that these lifestyles are unsustainable, indeed that they are the basic cause of the global resource and ecological predicament. For example, if the world's people were to have in 2060 the per capita energy consumption that rich countries average today, world energy supply would have to be ten times its present level. If all people were to aspire to the present rich world levels of GNP per person by 2060, then economic output would have to be 20 times what it is today—quite implausible with global ecological resources already under severe stress today. It appears that it is impossible for all to have the living standards the few in rich countries have at present.

What is Appropriate Development?

Its focal concept is the highly economically and socially self-sufficient community, enabling most needs to be met by local people using local resources.

Central to this notion of local self-sufficiency is the permaculture concept of designing settlements to be permanent, low-input, and self maintaining ecological systems based mainly on complex tree plantings (providing food, materials, chemicals and medicines, and local industries).

Unfortunately, many who are critical of conventional development mistakenly see appropriate development in terms of the intermediate technologies and new trade arrangements that might make possible the achievement of development conceived in the same old terms, i.e. a highly industrialised, affluent, capital-intensive, technically sophisticated, high trade, high GNP way of life. Few benefit from this goal. The goal of appropriate development must be a state in which there are very low but adequate material living standards and levels of material production and consumption.

Satisfactory, appropriate development requires only a very modest level of technology and quantities of resources, including capital. Mostly what is needed are things like well-designed aquaculture ponds, dense forest-gardens, co-operatives, good water catchment design, poultry pens, earth-constructed dwellings, communal workshops, community working bees and committees, and good social and political arrangements for analysing problems and making decisions and resolving conflicts. If affluence is rejected, and the emphasis is put upon maximising local household and community self-sufficiency, then satisfactory material and cultural living standards can be achieved. Appropriate development is not based on receiving more money to buy more products. There are so many other factors involved in a high quality of life that have nothing to do with a cash economy. Many local communities just need better social procedures to organise regular community working parties and banks. It is unlikely that the 'trickle down effect' of developing vast commodity and manufacturing export industries in expanding urban areas will benefit the rural masses.

It is therefore of utmost importance to recognise that the development and technology evident in Western affluent countries only represents one of the many forms of development that are possible, and there are quite different forms towards which a nation might choose to develop.

We are racing at accelerating pace down a path towards a range of extremely serious global problems. Nothing will be more important in determining whether we manage to get off that path than recognition of the way conventional economic theory has warped our thinking about development.

Person-to-Person Versus Person-to-Things Relationships

There are two entirely different principles which can shape a society's image of itself. Either a person-to-person or a person-to-things relationship predominates. In the

first case, events are examined in the light of their significance with regard to neighbours or relatives, ancestors or gods; whereas, in the second, all circumstances in the life of society are judged according to what they contribute to the acquisition and ownership of things. The use of technology is essential.

Following the Second World War, the Third World countries were perceived for the first time from a material-centred viewpoint. Everywhere one looked, societies were discovered with an appalling lack of useful objects. And the more the developed, materialistically-minded countries looked, the more that the primarily important ideas of relationships with neighbours, ancestors and gods more or less melted into thin air. The popular image was of the have-nots desperately battling for mere survival. Such a concept provided the basis for programmes of global good will. Tools of progress were regarded as guarantors of successful development. The more technology, the better. After all, technology is merely an extension of the simple tools used everywhere.

Technology was powerful too, but also neutral, entirely at the service of the user.

In reality, of course, a model of civilisation follows hot on the heels of modern technology. The introduction of technology in the Third World paved the way for a conquest of society from within. However innocent they appear to be, the products of the modern world only function as long as large parts of society behave according to plan. Both individual will and chance have to be suppressed in this model. Everything has to be co-ordinated and disciplined.

But in developing countries, things often don't work that way. In almost any developing country, you can find unused equipment, rusting machinery and factories working at half their capacity. For the 'technical development' needs many requirements to be fulfilled to set the interconnected systems whirring. This generally means dismantling traditional societies. No society can stay the same; there can be no use of technology without remodelling the whole.

Any technical device is much more than an aid; it is culturally potent. Technologies shape feelings and fashion world views; they leave traces everywhere. Even perceptions are changing: nature is viewed in mechanical terms; space is seen as geometrically homogenous, and time as linear. Technology cannot be laid aside like a simple tool. Technological civilisation has taken the place of the traditional aspirations and ideals.

Yet, the behind-the-scene manipulation of powers are ignored, out of sight. Effect and cause become separated. Technology as seen in a car is exciting, glamorous, and yet the prerequisites of making that car, and the effects it has on the environment, are far from view.

Today, the magic tools of progress dominate the imagination in many developing countries. But the construction of the underpinning systems has got stuck, and may never be completed due to the shortage of resources and environmental pressures. It is this rift between the newly-acquired ideal and the reality lagging behind that will shape the future of developing countries.

RESOURCE 2

CASE STUDIES OF VARIOUS TYPES OF TECHNOLOGY

1. New Technology in Farming

High yielding varieties — new seeds for crops such as rice, maize and wheat have been developed since the 1960s and considerably increase yields. The new seeds require artificial fertilizers and mature quickly, giving 2-3 crops a year. Many of these were developed during 'The Green Revolution'. A new grain, triticale, a cross between wheat and rye, has been genetically engineered and by 1990 was growing well under a variety of conditions in 32 countries. It is susceptible to disease, however, and has not always been accepted by farmers in Africa, who are used to growing traditional crops of wheat or millet.

2. Water Supplies

The Water for Health Organisation in Kenya provides water pumps, and women are trained in maintenance, management and sanitation. Women in the villages look after the daily running of the water supply, using simple trenches and pipes built by the community. Women are in charge of the operation as they are the ones traditionally spending hours every day fetching water (sometimes from 10 kms away).

3. The Narmada Valley Project, India

This project in central west India is one of the largest development projects in the world, and may take 100 years to complete. It involves constructing 3,200 dams, 30 of them major projects, with five producing 2,759 megawatts of electricity, and 19 will supply vast areas with irrigation water in an area of low annual rainfall. The World Bank lent India $450 million for the first two dams, though the total cost for the first stage is $2 billion. The first dam, Narmada Sagar, well-advanced by 1992, had no provision for rescuing native animals, and 40,000 hectares of prime teak and other forests have been drowned by rising waters. Eight communities and their villages have already been relocated, but only the farmers received any compensation — some cash and 2 hectares of irrigated land per family. The tribal hunters and gatherers received no compensation. Over 1 million people will have to move eventually and 3,500 square kilometres of farm and grazing land will go under water. The environmental impact statements warned of increasing salinity and water-logging problems, and the area is geologically unstable, with 30 earthquakes since 1790. The Indian government states that 11.5 million local villagers will benefit from electricity and irrigation. There are no large consumers of the electricity. Afforestation projects have been started but with little consultation with the local communities. Local people are working on the dam project but their homes have been flooded. No detailed plans have been announced for improving the supplies of drinking water or for safeguarding the area against water-borne diseases.

4. Women's Mill

The Milebeda Grinding Mill in the Sudan is one of the few in the world run by women. Two hundred women are members of a co-operative which manages the mill and provides the operators, mechanics and clerks — all women. The project started in 1993 as an income-generating project and to cut down the women's workloads. Previously, they had to either grind their sorghum and corn by hand, using the traditional stones, or walk kilometres to the next town to use a mill there. The mill uses a variety of bio-fuels or petrol, and now serves seven villages. To be able to organise and run the mill, the women had to be trained. So a literacy class was opened. Seeds from the mill are also given out to women for planting, and for every kilo of seed given out, 2 kilos of grain is returned after harvest as interest payment. Another proposed project is to open co-operative shops. In the first year, the men tried to take over the project, but with the training and feeling of community organisation, the mill has developed as a women's project.

5. Suka-Hollus Technique

In the Lake Titicaca area of Bolivia's upland plain, near La Paz, yields of millet and vegetable crops have been boosted 30% and potato yields have increased more than 200% due to the rediscovery and use of the ancient raised field or 'Suka-Hollus' method. The technique was used by ancient pre-Inca farmers but was lost for more than 1,000 years. In the late 1970s, archaeologists unearthed a series of raised platforms, which were small fields surrounded by canals. With support from Plan International and the Dutch government, fields have been rearranged into plots built on a foundation of large boulders which are then

covered with a layer of impenetrable clay and several layers of pebbles topped with compost. Canals surround the fields, which irrigate in dry times and drain water away during heavy rains or floods. During the drought of 1982-83, farmers using Suka-Hollus had ample water. In floods three years later, the canals drained away the water. In addition, the water in the canals acts as a natural air-conditioner. During the day, the water is heated by the strong sunlight. As the temperature drops in the evening, mist forms over the canals, forming a protective blanket against the damaging frosts which can badly affect the potato crop. The farmers are provided with tools and new seeds, and the Suka-Hollus method is expanding to rehabilitate wetlands. For the first time in decades, the area is now self-sufficient in vegetables all year round.

6. Famine Relief

Several local methods of preventing famine as a result of drought in Ethiopia have been developed through the Institute of Agricultural Research. One is the breeding of multi-purpose cows. Farmers have traditionally only used draught oxen to pull their ploughs, but are now sold pairs of pregnant cows which are capable of both producing milk and calves to sell and pulling ploughs. Broad-bed cultivation reduces wind erosion and loss of seed by utilising a double plough. This consists of two traditional ploughs lashed together to make a triangle 1 metre across at the base. The farmer then ties on two metal wings to shape the seed bed and a chain that drags along the ground, smoothing the soil and covering seeds. The whole thing costs about $20 and can be assembled in a few minutes. Alternative methods of removing insect pests (rather than using chemical pesticides) are still being investigated. After years of drought, famine and civil strife, some villages are now self-sufficient in food.

7. Irrigation Pumps

Small 5hp irrigation pumps are being used in South Sulawesi Island, Indonesia. In the floods of the wet season, farmers can pump out excess water. In the dry, they tap into the abundant water table to irrigate crops. More rice, watermelons and corn are now grown. Another community closer to the sea has built a check dam to prevent salt water backing up into the canals used for irrigation in the dry season. Local farmers did the construction.

8. Defence Agreement

In January 1995, India and the United States reached a military agreement, and US companies pledged nearly $5 million in joint projects. In defence, US will help India develop its light combat aircraft, carry out joint exercises with the navy and airforce in the Indian Ocean, and slowly induce India's massive armed forces to change from Soviet and Russian armaments to the American weapons system. The US will thus effectively neutralise India as an independent regional military power. The India-US co-operation will involve telecommunications, power and health services and in time will include insurance and other service industries. Up to now, self-sufficiency programmes have not provided for the more privileged Indians, let alone the poor. For example, in the whole of India, there are only 7 million telephone lines, less than New York City. Waiting time for a new telephone can exceed ten years.

9. Huge Car Market

China is the largest potential market for cars. In 1987, a new Chinese-designed car was launched by the Number One Automobile Works in Changchung. The factory has specialised in 4-tonne Liberation trucks (the workhorses of China) and the immense Red Flag sedans, which are used by China's leaders. By 1995, production of the new car is expected to reach 150,000 , with 300,000 vehicles a year in the future. The cars will be used in taxi fleets, government offices and businesses. China also has a joint venture with Volkswagen to produce over 20,000 Santana cars a year. The development of new materials, fuel-saving devices, increasing use of robots in construction, and other innovations are causing numerous changes to other world car manufacturers, so that the Less Developed Countries have had problems in developing their own car industries.

10. Brick Making

In Botswana, government investigations found that the smaller the brick making facility, the more economic the cost of the bricks produced. However, the traditional methods of slop moulding (where the mixture of clay and water is ladled into wooden moulds, which are upended onto a smooth floor and left to dry for 10-30 days) resulted in numerous failures. A local non-government group introduced brick-presses, where the moulded clay mixture is pressed manually or with power. Pressing produces a more regular shaped brick and uses less water and cement to reinforce the brick and gives far higher production rates. Other attempts to set up joint ventures using continuous extrusion and modern kilns for firing, and individual entrepreneurs, have failed. Using cement-blocks or importing bricks is another expensive alternative. Any really successful innovations so far have been promoted by the non-government organisations.

RESOURCE 3

MATRIX FOR ASSESSING APPROPRIATE TECHNOLOGY

	POSSIBLE EFFECTS			
PROJECT	• ON PEOPLE	• ON CULTURAL/SOCIAL TRADITIONS	• ON CAPITAL	• ON THE ENVIRONMENT
1				
2				
3				
4				
5				

RESOURCE 4

TEACHING ACTIVITY: SUKA-HOLLUS GAME

Instructions

- This activity was developed for a Year 9-10 Social Science class.
- You are asked to consider:
  - If this role play game is suitable for the Year 9-10 students.
  - What adaptations are required to use the activity in other subject areas.
  - If the activity contradicts or helps explain the concepts of appropriate technology.
- What adaptations would be required to enable you to implement this activity in the classroom?

Student Activity: How can farmers be encouraged to adopt the Suka-Hollus technique?

The Technique

In the Lake Titicaca area of Bolivia's upland plain, near La Paz, yields of millet and vegetable crops have been boosted 30% and potato yields have increased more than 200% due to the rediscovery and use of the ancient raised field or 'Suka-Hollus' method. The technique was used by ancient pre-Inca farmers but was lost for more than 1,000 years. In the late 1970s, archaeologists unearthed a series of raised platforms, which were small fields surrounded by canals. With support from Plan International and the Dutch government, fields have been rearranged into plots built on a foundation of large boulders which are then covered with a layer of impenetrable clay and several layers of pebbles topped with compost. Canals surround the fields, which irrigate in dry times and drain water away during heavy rains or floods. During the drought of 1982-83, farmers using Suka-Hollus had ample water. In floods three years later, the canals drained away the water. In addition, the water in the canals acts as a natural air-conditioner. During the day, the water is heated by the strong sunlight. As the temperature drops in the evening, mist forms over the canals, forming a protective blanket against the damaging frosts which can badly affect the potato crop. The farmers are provided with tools and new seeds, and the Suka-Hollus method is expanding to rehabilitate wetlands. For the first time in decades, the area is now self-sufficient in vegetables all year round.

The class is divided into three groups. Group A represents a pre-Inca farming group in Bolivia. Group B are to play the modern-times roles of various individuals attempting to improve farming techniques in modern Bolivia. Group C are individual villagers in modern times. The numbers of roles in each group can be altered to suit student numbers in a class.

Group A

The ancient village people of pre-Inca Bolivia who have built a series of stone platforms, lined with clay, surrounded by canals, and fed by mountain streams. Corn, potatoes and a type of cabbage are the major vegetable crops.

Head Villager Pero, hereditary leader of a village on the upland plateau, who can read ancient Inca script

Prince Ramman, land owner of all the land on the upland, benevolent

Kukus, stone mason, leader of the local craft group, landless but skilled

Lucas, his son and labourer, landless

High Priest Mulatee, religious leader, possessed of special powers

Chisto, peasant farm worker

Numant, peasant farm worker

Hulla, his wife, and mother of five living children

Resa, local merchant trader, can read simple Inca script, well-travelled

Group B

Modern day village on the uplands, faced with falling farm yields, a growing population, and some international aid funds from Plan International and the Dutch government to investigate and then implement an irrigation system.

Head Villager Ramos, elected leader of the village, educated to Year 3 high school

Helena, his wife, primary-educated, mother of three sons.

Father Frances, local Catholic priest

Paul Williams, aid worker from Plan International, trained social worker and with a farming background from Australia

Pieter van Dorn, agricultural economist from Holland

Betrand, construction engineer from La Paz

Luca, his labourer assistant

Susanna, widow of Pedro, a peasant farmer, uneducated

Luke, a peasant farmer, owns small plot

Dr Pedro da Suka, archaeologist from La Paz University

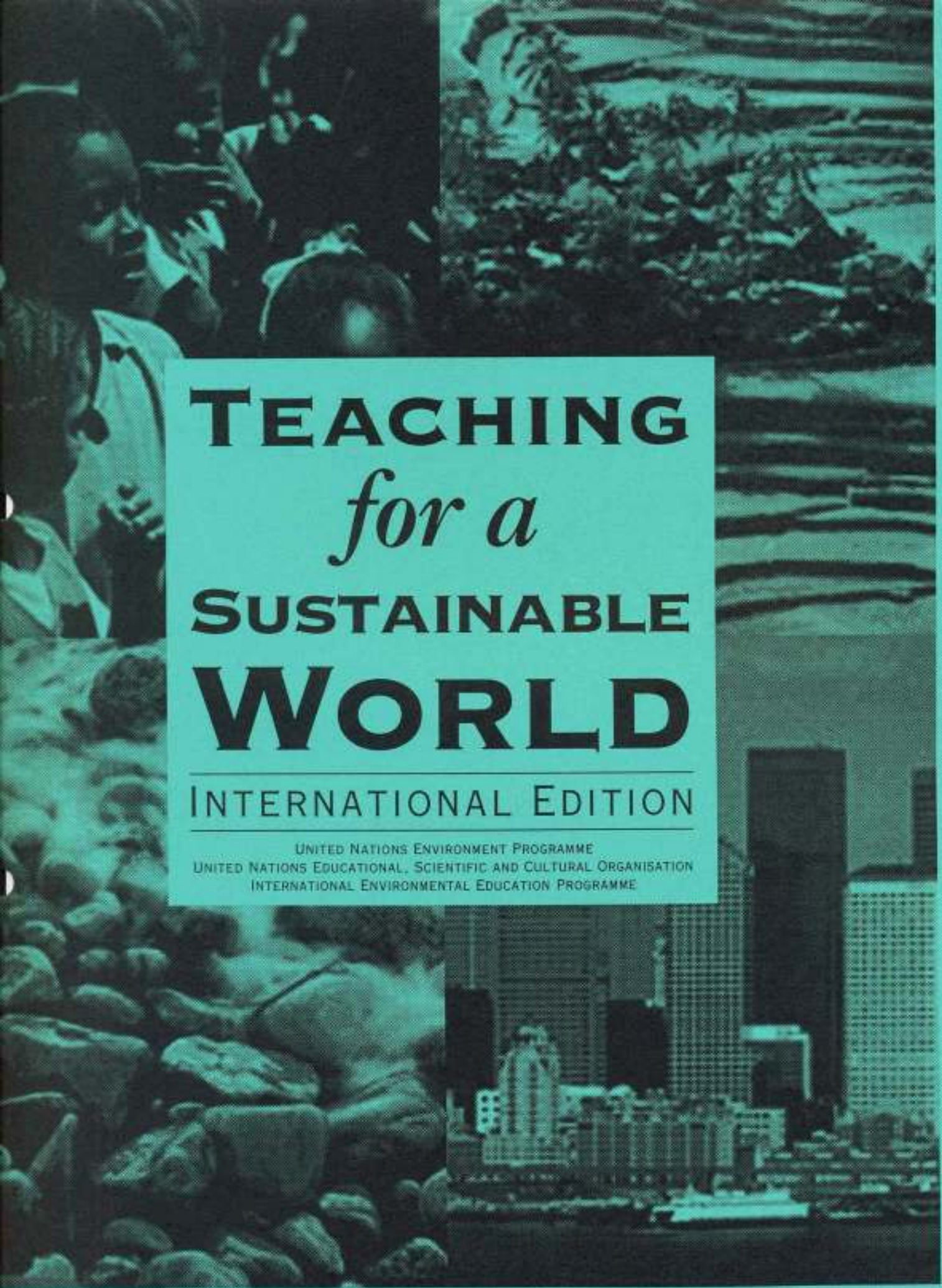
Anna Augusto, school teacher

Group C

Local villagers, farmers, shop-keepers, donkey drivers. These people need to be convinced that the Suka-Hollus technique, so recently discovered by da Suka, will work, and that the effort will mean more secure food supplies.

Conducting the Activity

1. Ask group members to introduce themselves to other members of their group. Name labels may prove most helpful.
2. Ask the three groups to read about the Suka-Hollus technique and to discuss how they might benefit from it and what problems it might cause.
3. Group A and B both develop a script and then act a short play presenting their ideas on the development of the Suka-Hollus technique (outlined in Resource 2 and above). Group A and Group B should not consult when doing this.
4. At the end of the game, Group C has a 'village' discussion as to whether or not they consider the proposed project will succeed.



MODULE 24

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
UNITED NATIONS ENVIRONMENT PROGRAMME

AusAID
AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT

AUSTRALIAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION INC.

UNITEN UNIVERSITY

REFUGEES *and* DEVELOPMENT

JAN OLIVER
EDWORKS
AUSTRALIA

INTRODUCTION

Improved worldwide communications mean much of the world is now more aware of the many refugees leaving Bosnia, Afghanistan, Rwanda, Cambodia and China than ever before. With this awareness has come a need to understand the actions of both governments and aid agencies in supporting the millions of people no longer living in their own homes and countries.

The workshop aims to increase participants' understanding of the refugee situation, the impact of dislocation on quality of people's lives, and on the country receiving them as refugees. The example of the work of some organisations committed to refugee care is used to encourage a personal commitment to supporting refugees.

OUTCOMES

The workshop seeks to enable participants to:

- increase their knowledge and understanding of the nature, patterns, aid programmes and significance of refugees on Earth;
- understand the root causes of the increase in refugees worldwide;
- empathise with those placed in refugee status; and
- make a personal commitment to refugees which will maximise support for refugees' welfare and environmental quality of life.

WORKSHOP OUTLINE

There are five main activities.

1. Introduction

Participants explore their own perceptions of refugees, and the meanings of common terminology.

2. Focus Activity

Individuals use a map and statistics to investigate key questions about refugees: where do they come from and why, and where are they going?

3. Case Studies and Action by Governments and Humanitarian Agencies

Groups of participants consider some of the international programmes for refugees and how these match perceived needs.

4. Personal action

A practical review session, where participants are asked to consider personal actions and application to their own lives.

5. Curriculum Applications

An activity in which participants evaluate a group of teaching activities on refugee aid and suggest adaptations to their area of teaching.

MATERIALS REQUIRED

A) PROVIDED

OVERHEAD TRANSPARENCY MASTERS

OHT 1: Refugees and Asylum Seekers at the End of 1993

OHT 2: Refugees: Numbers of Persons and their Countries of Origin,1993

OHT 3: Major Causes of Refugee Movements

OHT 4: Who Helps Refugees? Contributions to International Refugee Aid Agencies, 1992

OHT 5: Major Needs of Refugees

RESOURCES

Resource 1: Perceptions of Refugees

Resource 2: Definitions of Terms

Resource 3: Case Studies of Aid Programmes for Assisting Refugees

Resource 4: What Can I Do?

Resource 5: Practical Activities

B) TO OBTAIN

Activity 3: Chart or poster paper and pens

ADDITIONAL READING

Austcare (undated) *Connection Kit*, Austcare, Camperdown.

Cassen, R. (ed.) (1986) *Does Aid Work? Report to an Intergovernmental Task Force*, Clarendon Press, Oxford.

Clark, J. (1991) *Democratising Development, The Role of Voluntary Organisations*, Earthscan Publications, London.

Department of Immigration and Ethnic Affairs (1994) *Refugee and Humanitarian Issues*, AGPS, Canberra.

Groves, R. (1994) Refugees: The Dynamics of Displacement, *Geodate* 7(4).

Guiton, G (1994) *Horizons*, Winter.

Hancock, G. (1989) *Lords of Poverty*, Macmillan, London.

MacNeill, J., Winsemius, P., and Yakushiji, S. (1991) *Beyond Interdependence: The Meshing of the World's Economy and the Earth's Ecology*, Oxford University Press, Oxford.

Shea, N. (1994) *Refugees Resource Kit 1994*, Australian Council of Churches Refugee and Migrant Services, Sydney.

UNHCR/Australia (1991) *Refugee Children Around the World*, Longman Cheshire, Melbourne.

UNHCR (undated) *Refugee Children*, UNHCR, Geneva, Switzerland.

UNHCR (1993) *The State of the World's Refugees*, UNHCR, Geneva, Switzerland.

UNHCR (1994) *Refugees: Focus Africa*, No. 96.

ACKNOWLEDGEMENTS

Our special thanks go to Hermine Partamian, National Coordinator, Refugee and Migrant Services, Australian Council of Churches for sharing her parish refugee resource kits.

1. Introduction

This activity focuses on participants' perceptions and knowledge of terminology relating to refugees.

A. Perceptions about Refugees

- Distribute Resource 1 and ask participants to complete the word scale.
- Participants can compare their perceptions with each other, or put their responses away until the end of the workshop when they can review their perceptions. Have ideas and awareness changed as a result of doing some of these activities?

B. Definitions of Terms

- Distribute Resource 2, which lists various terms associated with refugees.
- Ask participants to match the correct term with the appropriate definition.
- Check any misunderstandings.

The correct answers are:

1	I	4	G	7	H	10	L
2	D	5	C	8	A	11	K
3	B	6	J	9	E	12	F

2. Focus Activity

Where are the Refugees Today?

- Display OHT 1, the map illustrating refugee location and countries involved.
  - Ask participants to name the countries involved.
  - Draw attention to the widespread nature of the refugee situation.
- Display OHT 2, the statistics on estimated numbers of refugees in December 1993.
  - Ask participants to list the ten countries responsible for most refugees.
  - Ask participants to suggest the reasons why the top ranking countries would have situations causing refugee outflow.
  - Check responses by displaying OHT 3 which provides a summary of the most common reasons for people leaving their own homes.
  - The ten countries providing the highest number of asylum places should then be ranked.
  - Display OHT 4 which shows the chief countries providing refugee aid.
  - Ask participants for their reactions to this graph.

3. Case Studies of Actions by Governments and Agencies

- Provide participants with large sheets of paper and pens.
- Display OHT 5 showing the major needs of refugees.
- Ask groups of participants to brainstorm their ideas about the types of assistance which may be required by refugees, both in camps and when being repatriated or resettled, and to write these ideas on the paper.

- Distribute copies of Resource 3 and ask participants to read through some case studies of the actual assistance provided in various areas of the world.
- Participants should then match one or more of the refugee assistance programmes to one or more of the brainstormed suggestions.
- Ask them to consider their matches using the following questions:
  - Are there many close matches?
  - Are there gaps between what is apparently being provided and what has been suggested?
  - Can participants suggest reasons why desirable aid may not be provided?
- Using felt pens, participants can circle those matched suggestions and aid which they consider would most benefit the refugees at the least cost to the environment.

4. Personal Action

A. This activity allows participants to assess their responses to assisting refugees. It can be done as a group discussion, or with individuals working on their own and then comparing their decisions with others.

- Distribute Resource 4 to each participant.
- Ask participants to 'tick' those actions they would do now, to put a '?' next to ones they might consider in the future, and an 'x' next to those actions they could or would not be prepared to do.

B. Remind participants of their original perception study (Activity 1).

- Each should now consider their earlier responses.
- Have a group discussion about their feelings and understandings of the refugee situation.

5. Curriculum Applications

In this activity, participants are asked to consider a group of teaching activities and suggest how they may be adapted to their own areas of teaching.

Distribute a copy of Resource 5 to each participant and tell them that it is a teaching activity which was originally developed for 15-16 year old students. Ask participants to:

- examine the student activities shown. Evaluate the extent to which these could be used with secondary school students.
- explain if these activities would require alterations to make them suitable for younger students.
- keeping in mind that you may have refugee children in your class, identify any problems you may have with implementing any of the activities. How would you handle these problems?

OHT 1

Refugees and Asylum Seekers at the End of 1993

Source: Australian Council of Churches (1994) *Refugees Resource Kit*, p. 10.

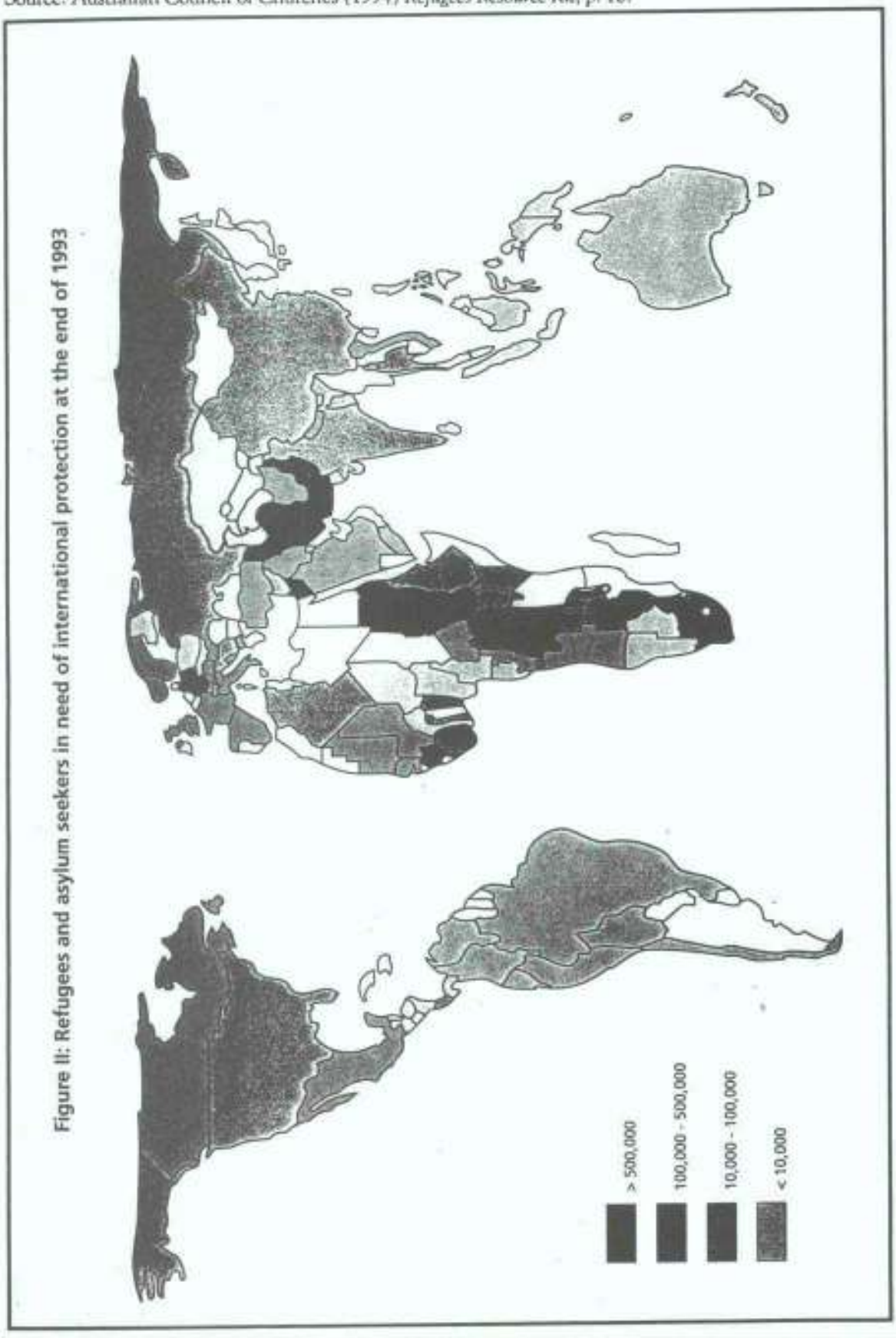


Figure II: Refugees and asylum seekers in need of international protection at the end of 1993

OHT's

OHT 2

Refugees: Numbers of Persons and Their Countries of Origin, 1993

Source: US Committee for Refugees, World Refugee Survey 1994, published in Australian Council of Churches (1994) *Refugees Resource Kit*, p. 9.

Host Country		Country of Origin
Iran	1,995,000	Afghanistan, Iraq
Pakistan	1,482,300	Afganistan
Jordan	1,073,600	Palestinians
Malawi	700,000	Mozambique
Sudan	633,000	Eritrea, Ethiopia
Gaza Strip	603,000	Palestinians
Guinea	570,000	Liberia, Sierra Leone
Germany	529,100	Former Yugoslavia
Tanzania	479,500	Burundi
West Bank	479,000	Palestinians
Zaire	452,000	Angola, Sudan
Rwanda	370,000	Burundi
Serbia/Montenegro	357,000	Former Yugoslavia
Russian Federation	347,500	Georgia, Tajikistan
Kenya	332,000	Somalia
Lebanon	329,000	Palestinians
India	325,600	China, Sri Lanka
Syria	319,200	Palestinians
South Africa	300,000	Mozambique
China	296,000	Vietnam
Armenia	290,000	Azerbaijan
Croatia	280,000	Former Yugoslavia
Uganda	257,000	Sudan, Rwanda
Azerbaijan	251,000	Armenia
Cote d'Ivoire	250,000	Liberia
Zimbabwe	200,000	Mozambique
Bangladesh	199,000	Burma
Ethiopia	156,000	Somalia, Sudan
USA	150,400	Central America
Ghana	133,000	Togo
Algeria	121,000	W. Sahara
Benin	120,000	Togo
Burundi	110,000	Rwanda
Liberia	110,000	Sierra Leone
Thailand	108,300	Burma

OHT'S

OHT 3

MAJOR CAUSES OF REFUGEE MOVEMENTS

- Major world wars in the past (especially World War II)
- Decolonisation (Examples: Algeria, Angola, Zaire, Pakistan)
- Political unrest between different parties, or between the government (not always elected) and rebel groups (Examples: Cambodia, Kurds in Iraq, Mozambique, Angola, Afghanistan, Bosnia, Herzegovina and Rwanda)
- Economic factors such as poverty and economic deprivation (Examples: Ethiopia, Sudan, Somalia)
- Environmental factors such as natural (including long-term climate change) and human-caused disasters (including nuclear accidents) (Examples: Philippines, Bangladesh, Sudan and countries of the Sahel, Ukraine, Kurdistan)
- Ethnic tensions between different racial, social or religious groups (Examples: Armenia, Azerbaijan, Bhutan, Burma, Ethiopia, Georgia, Iraq, Rwanda, Sri Lanka, Sudan, former Yugoslavia)

OHT 4

WHO HELPS REFUGEES? CONTRIBUTIONS TO INTERNATIONAL REFUGEE AID AGENCIES, 1992

Source: Australian Council of Churches (1994) *Refugees Resource Kit*, p. 19.

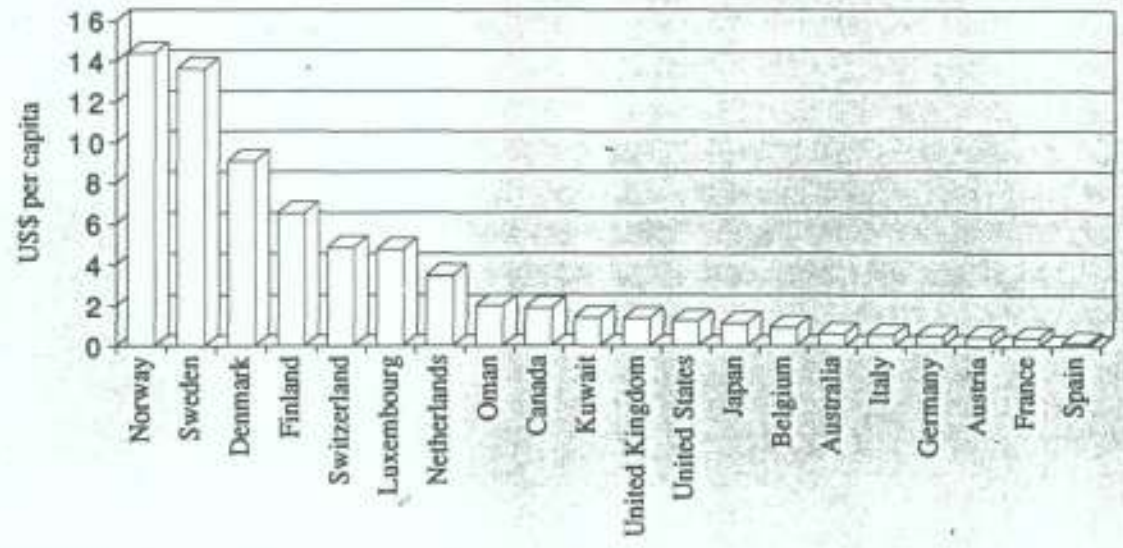


Figure III: 1992 Contributions to International Refugee Aid Agencies

The top twenty contributions to international refugee aid agencies: UNHCR, the International Organization for Migration (IOM) and the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA). Compared to the rest of the world, Australia's contribution does not appear particularly generous.

OHT 5

Major Needs of Refugees

Immediate

- Emergency relief of food, water, shelter, health services, cooking pots and fuel.
- Shelter in refugee camps should be as far as possible from frontier of country of origin.
- Security and protection from own people, military and host groups.

Long Term

- A final durable solution such as voluntary repatriation, local integration in the country of asylum, or resettlement in a new country.
- Solution of the problems which caused them to flee their own homes in the first place.
- Suitable work or land to regain independence.

RESOURCE 1

PERCEPTIONS OF REFUGEES

Instructions

Tick the space along the lines that is closest to your opinions about refugees.

Most refugees:

live in the worst homes	___ ___ ___ ___ ___	live in the best homes
get fair treatment	___ ___ ___ ___ ___	don't get fair treatment
are in lower socio-economic group	___ ___ ___ ___ ___	are in upper socio-economic group
once earned high incomes	___ ___ ___ ___ ___	once earned low incomes
chose to leave own home	___ ___ ___ ___ ___	leave without considering
have many possessions	___ ___ ___ ___ ___	have few possessions
waste money	___ ___ ___ ___ ___	utilise money carefully
sit around waiting for help	___ ___ ___ ___ ___	work at whatever is available
are expensive to help	___ ___ ___ ___ ___	are cheap to help
are mostly women	___ ___ ___ ___ ___	are mostly men
can't return home	___ ___ ___ ___ ___	can return home in time
have lots of children	___ ___ ___ ___ ___	have small families
come from famine areas	___ ___ ___ ___ ___	come from well-watered areas
are usually African	___ ___ ___ ___ ___	come from all over the world
often have their human rights violated	___ ___ ___ ___ ___	maintain their human rights

RESOURCE 2

DEFINITIONS OF TERMS

Terms:

1. Host country
2. Refugee
3. UNHCR
4. Asylum seekers
5. Resettlement
6. Carrier sanctions
7. Repatriation
8. Displaced person
9. Integration
10. Stop-gap aid
11. Safe haven zones
12. Environmental refugees

Definitions

A One who leaves his or her own home because of fear of persecution or aggression, but does not cross the international border into another country.

B United Nations High Commission for Refugees (or the Office of the High Commissioner).

C The process whereby refugees move from a country of asylum to settle permanently in a new country and under its protection. There are ten countries setting annual quotas for resettlement: Australia, USA, Canada, Sweden, Norway, New Zealand, Denmark, Finland, Netherlands, Switzerland.

D A person who is outside his or her former home country owing to a well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion, and who is unable or unwilling to avail himself or herself of the protection of that country, or to return there for reasons of fear of persecution.

E Settlement in the country of asylum (usually close to the country of origin).

F Those leaving their country because the land is no longer able to support them; includes those affected by natural disasters and includes areas made uninhabitable by deliberate acts.

G Those initially seeking temporary settlement in another country.

H Refugees return to the country of origin, either freely or through use of force.

I Either a country of asylum or a country of resettlement.

J Heavy penalties imposed by governments against airlines and other transport providers that carry passengers whose documents are not in order.

K United Nations established areas within a country in turmoil to allow international humanitarian organisations to provide shelter, food, medical care and other necessities.

L Short-term relief provided by international humanitarian agencies to provide immediate shelter, food, medical attention for refugees and displaced persons.

RESOURCE 3

CASE STUDIES OF AID PROGRAMMES FOR ASSISTING REFUGEES

Rebuilding Central America

In Central America, numerous small refugee assistance programmes are assisted by international aid agencies. These include rebuilding houses for refugees in El Salvador, Community Health Programmes among displaced people in Guatemala, and Women's Training Centre in Guatemala City. There are training programmes for women leaders in Nicaragua, where most refugee families from neighbouring countries have little training in organising community committees, providing educational materials or resolving conflicts. An education programme has been introduced in El Salvador to improve literacy for the ex-combatants of the FMLN, who have been fighting the Government. Many are also being trained to form new police forces.

Repatriation into El Salvador

At the end of 1989 and early 1990, 8,500 Salvadoran refugees voluntarily left refugee camps in Honduras and returned to their own country. They had fled ten years before, escaping civil war and repression by the armed forces. In 1992, the Peace Accord and subsequent demilitarisation has generated hopes for a lasting peace. By 1992, with the aid of an aid agency, some of the refugee groups had constructed new housing settlements, but were hampered by lack of workers. A family-run child care centre was set up, enabling women to leave their children there and then help in the building programme. Others produced shoes, clothes and utensils for local and regional markets.

Learning to Live with Mines

In many countries, there are millions of land mines scattered over the ground. In Angola, there are over 9 million, in Mozambique 2 million, in Sudan up to 2 million, in Cambodia at least 4, perhaps 10 million, and in Afghanistan, up to 10 million were scattered randomly. Every year, refugees returning home or living in war zones are blown up or injured by exploding mines. Most of the minefields are unmarked; many of the mines look like plastic toys. Seventy-five per cent of the mine victims are children. Thousands have limbs amputated. The cost of treatment or artificial limbs is beyond most of the families. Mine clearance thus becomes essential if repatriation is to continue in many countries. But mine clearing is slow, laborious and costly, usually being carried out by hand, at great risk to the mine-clearers. Education about avoiding mines is also essential. UNHCR organises training programmes with refugees and those being repatriated, and distributes materials publicising the dangers of mines.

Mine clearance has been financed using specialist firms and armed forces from donor countries like Britain and Australia. However, other world action is needed. There are still 95 manufacturers in 48 countries producing up to 10 million anti-personnel mines every year. In 1995, a summit will examine proposed changes to a 1980 convention to enable the United Nations to take more affirmative action against the use of mines.

Women's Rape Centre

A Women's Centre has been set up in Zagreb to assist women who are victims of the rape/death camps in Bosnia. A medical clinic has been established and resourced, and staff training implemented by Austcare, an Australian aid agency. Assistance to women who are pregnant as a result of rape is also provided. Amnesty International considers that assaults on women in many countries are unreported, and many are ignored or even condoned by authorities. Amnesty International is now collecting data.

Seeds of Hope

An Australian agricultural scientist is co-ordinating an international programme to help restore Rwanda's devastated food crops. The Seeds of Hope programme is a world-first in emergency relief, aimed at heading off the next round of famine in Rwanda. It provides seeds and grains for planting, not eating. Seeds of Hope is multiplying seeds and cuttings of Rwanda's six most important crops to provide the bases for new plantings, and these are then being distributed to farmers as they return to their own farms. Rwanda's food crops were left to rot in the ground after civil war broke out in April 1994.

Tree Planting and Dune Control in the Sahel of Central Africa

In northern Senegal, Mali and northern Burkina Faso, drought conditions have persisted for the past 22 years, so that once-fertile areas are now incapable of being cropped.

Desertification, caused by erratic and insufficient rains, and an increasing poplation has seen massive deforestation, so that the soil is unprotected and eroding. Sand is encroaching into the villages and farms that once supported 60 million people. Many of these people (termed 'environmental refugees') are now internally displaced people, moving into neighbouring areas or border refugee camps in the search for food, water, and medical attention for respiratory infections, cholera and diarrhoea caused by water shortages and constant dust. Many wish to remain in their traditional villages, and are being assisted by an aid agency to dig wells, many 40 metres deep to avoid the shallow saline water table. A children's programme, 'One Child - One Tree' involves each child planting at least one tree in each year, and then having the responsiblity of caring for it. In 1993-4, 42,000 trees were planted in 157 villages in Senegal, with another 18,000 reafforestation plants and fruit trees planted in the next season. Fast-growing Australian wattles are being planted as wind breaks and for fuel.

Women's Centre

The women's centre at Budaburam refugee camp 20 km west of Accra in Ghana is one of the busier places in a Liberian refugee community. In 1993, more than 150 refugee women built the centre themselves and now use it for a variety of programmes, including construction classes, counselling, public-health outreach, small business training, and a savings and loan programme. Several UN agencies have established similar centres in Cote d'Ivoire. Classes of women build dormitories and are employed to build latrines in the camps. Some women have undertaken mental health training to help the many residents who have gone through harrowing experiences. Small-business loans are being made to individuals, mainly women, who are starting or seeking to improve a small business. These businesses include fish smoking, used clothing, sewing and hairdressing.

Security in Camps

UNHCR attempts to ensure adequate security at refugee camps, but is continuously faced with physical threats in many shapes and forms. Continuing conflicts are the greatest risk - cross border attacks, and attacks on the camps by armed guerillas or the armed forces. Physical threats to refugees include capture of women, rape, gang-robbery and murder. Refugees may be linked with national armed liberation movements. In 1993, Tanzania developed new strategies for coping with such threats. Many refugees were moved to settlements far from the border and some new settlements were created. Hutus and Tutsis from Rwanda and Burundi were separated. Where there were ethnically-mixed couples and children, who might be at risk in either Hutus or Tutsi settlements, these were sent to urban areas. Arms were removed from camps with minimum fuss. New settlements were built on land not coveted by Tanzanians who then continue to show sympathy to the refugees.

African Stoves

In Malawi, much of the forest cover had been removed for fuel by thousands of refugees fleeing from civil unrest and persecution in nearby Mozambique in the 1980s. In 1993, tens of thousands of a newly designed iron stove (which uses a minimum of wood) have been constructed, and education in the careful management of wood sources and replanting have been introduced by an aid agency. The same types of stoves have also been built by local labour in Zimbabwe's refugee camps. The areas have been badly affected by drought, and fuel is in very short supply. The construction of the stoves also increases employment.

Dental Repairs

In Eritrea, international aid has assisted the Eritrean Public Health Department improve dental standards and offer dental and related repair work on the Eritreans whose jaws and faces have been severely damaged by mine explosions. Eritrean staff have been trained in Australia, and equipment and dental supplies provided to local hospitals.

Farming Relief in Tigray

In 1992, the Relief Society of Tigray in Africa assisted 95,000 farming families with oxen, ploughs, seeds and handtools to help re-establish thousands of refugee families returning from refugee camps in Sudan. This will help to develop the full agricultural potential of Tigray, and to regain food sufficiency in the area. Disabled refugees are being trained in welding and provision of services.

Cambodian Repatriation

As peace has come to Cambodia following decades of fighting, thousands of refugees are attempting to return home. Some have been in camps for 17 years and have never earned anything during that time. Forced to make new lives and gain money, many have been resettled in new villages. Life is hard, with water sometimes kilometres away, and no regular supplies of food as in the camps. Bridges and roads have to be repaired, wells dug, schools rebuilt or repaired, health services upgraded, latrines constructed and thousands of hectares of farm prepared for

families. UNHCR has recently spent over $9 million on such projects. Non-government organisations have also been active providing funds, training and surveying for repairing irrigation systems. Health services for industrial workers have been provided in Phnom Penh, and maternity wings established in a hospital, supported by visiting Australian specialists.

Thai Lake Rehabilitation

In Thailand, an environmental conservation project is financed by an aid agency to assist community organisations working with refugees from Cambodia in the border area to rehabilitate a lake in danger of over-exploitation through land speculation and inappropriate government planning. Two natural prawn grounds in the lake are being cared for. Areas of common use are being promoted, which will include grasslands on the lake's main island and some mangrove forests. Conservation farming is being introduced into some of the National Reserve Forests. These forests are continually encroached onto by landless refugees who have no other means of income other than farming the forest lands. Training programmes are teaching the people new farming methods, and how to legally resolve their problems.

RESOURCE 4

WHAT CAN I DO?

This list of possible actions by individuals living in the countries of the North has been prepared in conjunction with UNHCR and aid agencies.

- Write letters to local and national elected representatives, urging them to support refugee issues and provide solutions for a particular refugee crisis.
- Write a letter to the national minister for defence requesting arms trade be abolished to countries involved in internal conflicts giving rise to refugees/ displaced persons.
- Prepare a school display depicting various aspects of the world's refugee problem.
- Arrange a book sale in your neighbourhood to raise money to provide refugees with school books.
- Organise a school fund-raising activity and donate the proceeds to UNHCR. The end use can be specified.
- Instead of buying snacks for a month, donate the cost of such snacks to a refugee aid organisation.
- Contact a voluntary aid agency and organise a local collection of clothes and toys to supply refugees through that organisation.
- Be a friend to a refugee family in your own community. Offer to help with language, shopping, locating appropriate services.
- Contact a refugee resettlement agency in your area. Your own city government should be able to supply the address. You could also provide refugees tutoring in their adopted language or in any other subject.
- Invite a refugee to your class or meeting of a community group to share his or her experiences.
- Write to a refugee child, through the Children's Letterbox, UNHCR, Case Postale 2500, Geneva, Switzerland CH-1211.
- Offer to help an aid agency collect money or goods in your local community. Your local telephone book should provide contact addresses.

RESOURCE 5

PRACTICAL ACTIVITIES

PARTICIPANT ACTIVITIES

- Examine the student activities shown below. Evaluate the extent to which these could be used with a class of 15-16 year old students.
- Explain how these activities would require alterations to make them suitable for younger students.
- Keeping in mind that you may have refugee children in your class, identify any problems you may have with implementing any of the activities. How would you handle these problems?

CLASSROOM ACTIVITIES ON REFUGEES

These activities cover work both in and out of school. They may be attempted in any order, and should be done by teams of students. Your team should decide which activity they will attempt first.

1. Putting it into Practice: The Local Scene

- Undertake a local investigation into what health facilities are available in your own locality for women and their small children. Collect data by approaching the local neighbourhood centre, your local doctor, checking the telephone book, interviewing parents of young children, and contacting your local community health centre or baby clinic.
- Sort the data into a table like this:

Service	Availability	Cost	Who Funds?

- Consider the data. If these services were not available, how would mothers obtain health care?
- How much of this type of health care should be available to refugee mothers and their children? Why or why not?

2. Food Relief

Food relief can be organised in four ways: general food distribution for people who can cook their own meals; mass feeding from central kitchens; supplementary feeding for vulnerable groups; and intensive or therapeutic feeding of severely malnourished cases.

Your local group collects money and intends to buy food to send to refugees in Bosnia, Afghanistan and Rwanda. Consider these questions:

- What food is required?
- What foods would be unsuitable to send?
- Would it be better to send cash and let UNHCR or UNICEF do the purchasing?

3. Poster Design

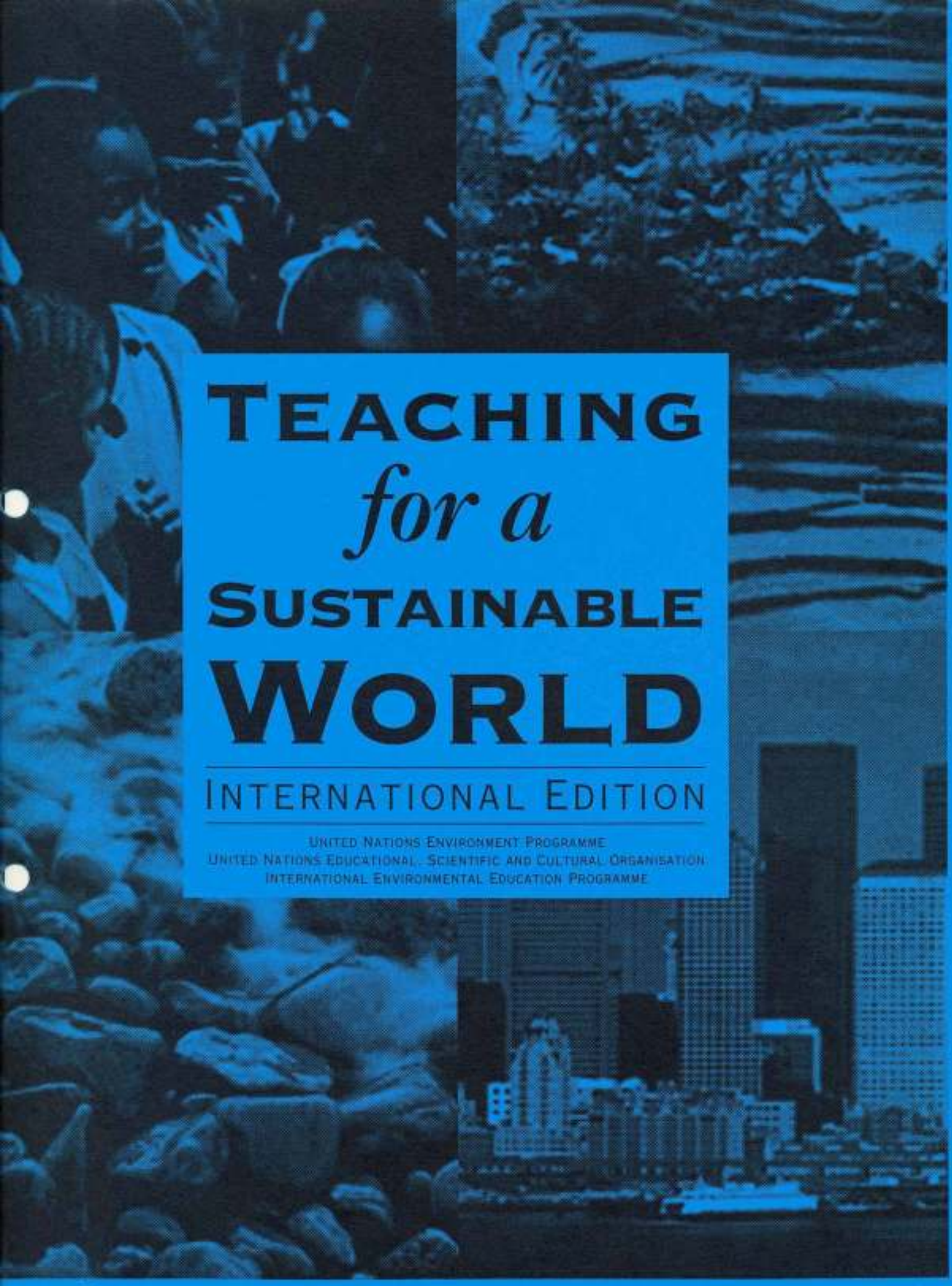
Design an aid-for-refugee-children poster (at least A4 size) to be displayed in either USA, Japan or France in light of this statement:

> *UNICEF has estimated that all major childhood diseases could be controlled, malnutrition halved, 4 million child-deaths avoided, all children provided with safe water and sanitation, basic education provided for all children, and family planning made universally available with $25 billion. This is half the amount spent on cigarettes in Europe in one year, $6 billion less than Americans spend on beer and $10 billion less than Japanese spend on business entertainment in one year.*

4. Project Evaluation

Select any one refugee project in Resource 2, and evaluate it carefully in the light of the following:

- Who is most likely to benefit from the programme?
- What effects is the programme likely to have on both the refugees and the local people and their environment?
- Rank these groups in terms of benefit from the refugee programme:
  - Refugees
  - Former soldiers involved in the civil war or riots
  - Former small landholders
  - Western suppliers of equipment and technology
  - Small businessmen in the area
  - The elite large businessmen of the country of asylum
  - The aid agency
  - The government of the asylum country
  - The government of the refugees' country
- Discuss the reasons why you have ranked one first, and another last.



MODULE 25

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP

AusAID

ANALYSING EDUCATIONAL RESOURCES

ZITA UNGER
ZIMAN PTY LTD PROGRAM EVALUATION AND TRAINING DESIGN
AUSTRALIA

INTRODUCTION

When teachers select resources for classroom use in development and environmental education there are a range of important issues that need to be considered. These include:

- whether resources support environmental objectives, concepts and skills;
- whether resources provide balanced opinion and a range of viewpoints;
- whether resources are racist or sexist in nature; and
- whether resources used for teaching controversial development and environmental issues are themselves embedded with conflicting ideologies and potential for controversy.

This module attempts to address many of these concerns.

Educationalists have been slow to accommodate issues of ecological sustainability and social justice. Part of the reason may be that education for sustainable living requires a reconceptualisation of environmental education and some of its assumptions. Those involved in development and environmental education need to become familiar with the core concepts of 'sustainable development' and 'education for sustainable living'. The Evaluation of Resources in Development and Environmental Education (ERDEE) assessment tool included in this module is designed to help equip the educator to identify core concepts and their essential elements.

It is often assumed that inclusion of more than one point of view is sufficient to provide diversity. However, even a 'good' text or resource, without glaring bias and stereotypes, can be narrow and undermine principles of environmental education. This makes the identification of 'balanced' materials especially demanding. This issue is raised during one of the workshop exercises, as well as by the critical reading that is included with this workshop. Essential features of educational resources that avoid stereotyping are defined in the ERDEE assessment tool.

Development and environmental issues are often controversial. They reflect diverse viewpoints, vested interests, and a range of ideological and moral positions. Resources used in teaching about such issues are themselves embedded with ideological positions and potential for controversy. Educationalists are better able to deal with these resources when they have a grasp of socially critical traditions in education and an appreciation of developments in environmental education and social theory. The series of activities and group discussions centred around the notion of 'theory', as well as the critical reading included in this workshop, represents an initial step in that appreciation.

Overall, this module attempts to develop strategies for evaluating resources that will assist in the selection and utilisation of materials for classroom use. The workshop is designed to be challenging yet provide practical support and guidelines for decisions about classroom resources.

OUTCOMES

This workshop aims to:

- develop strategies of analysis for evaluating text based content; and
- assist in the selection and utilisation of materials and resources for classroom use in the interests of environmental and development education

At the end of this session, participants should be able to:

- understand the four dimensions of the ERDEE assessment tool;
- select appropriate criteria for the evaluation of resources; and
- rate resources using the ERDEE assessment tool.

WORKSHOP OUTLINE

There are three components to this workshop.

First, a series of group discussion and reporting activities introduce participants to the different uses made of theory - how it applies to their teaching area, as well as how it functions at a political and social level. The aim is to sensitise participants towards a critical awareness of content issues in environmental education.

Second, an introduction is provided to the ERDEE assessment tool and its criteria. It is hoped that core concepts of ecological sustainability will be identified and extended through group discussion work.

Finally, participants have an opportunity to rate resources using the ERDEE assessment tool. It is hoped that the criteria for ecological sustainability from the assessment tool will be reinforced and that a critical appreciation of teaching for sustainable development will be enhanced.

MATERIALS REQUIRED

Overhead Transparency Masters

OHT 1: Aims and Outcomes

OHT 2: ERDEE Assessment Tool (discussion questions)

OHT 3: Large Dam Projects (discussion questions)

OHT 4: A City Is ... Past, Present, Future (discussion questions)

RESOURCES

Resource 1: The Role of Theory

Resource 2: Kelly Under Fire Over Kit

Resource 3: Which Office is Greener?

Resource 4: ERDEE Assessment Tool

Resource 5: ERDEE Checklist

Resource 6: Large Dam Projects:

- A. Walls of Water
- B. Voices Against the Flood
- C. Student Exercises

Resource 7: A City Is ... Past, Present, Future

READING

Reading 1: Commentary on *A City Is ...Past, Present, Future*

ADDITIONAL READING

Fien, J. (1993) *Education for Sustainable Living: A New Agenda For Teacher Education*. Background Paper, UNESCO Asia-Pacific Regional Experts' Meeting on Overcoming the Barriers to Environmental Education Through Teacher Education, Griffith University.

World Commission on Environment and Development (1989) *Our Common Future*. Oxford: Oxford University Press.

ACKNOWLEDGEMENTS

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ACTIVITIES

1. Setting the Scene

This activity is designed as an icebreaker for participants.

- Ask participants to introduce themselves to the person next to them and ask about their background and what they would like to get out of this workshop. Ask them to focus on issues they would like discussed in the workshop.
- Ask for reports to the group about the person 'interviewed'.
- Facilitator lists the topics raised on board.
- Present the aims and outcomes of this module to the group (OHT 1).

  The aims are to:

  - develop strategies of analysis for evaluating text based content
  - assist in the selection and utilisation of materials and resources for classroom use in the interests of environmental and development education.
- The expected outcomes for participants are to:
  - understand the four dimensions of the ERDEE assessment tool
  - be able to select appropriate criteria for the evaluation of resources
  - be able to rate resources using the ERDEE as an assessment tool.

2. Introduction to Theory

This activity introduces participants to different uses made of theory.

This is an important part of the workshop, because there are many ways of thinking about theory apart from the inherent quality of ideas. As educators, we should be aware that meaning is supported by institutional contexts - by the techniques, practices and social relations in the school setting, over and above the ideas themselves. Recent academic literature about the production of knowledge has pointed to power-knowledge relations and other cultural supports that reproduce and maintain knowledge. Thus the critical awareness of social and environmental perspectives in turn depends on being able to question underlying assumptions and to situate knowledge in terms of their ideological selections. The politics of knowledge becomes a significant element in the examination of theory.

- Divide participants into groups of 5-6, with the task of preparing a brief group report. The task is based on the cartoon and questions on Resource 1.
- To debrief, refer participants to the three examples of how theory applied to their area. Did they identify:
  - theories about their subject area, or the *how* to teach - i.e. what is environmental education?
  - theories in their subject area, or the *what* to teach - i.e. theories of the environment
  - struggles over their subject area, or the *who* decides - i.e. what priorities for environmental education?

  Many responses are possible. Some features belong to more than one category. For example, the question 'what is environmental education?' can constitute both a theory about environmental education, and a struggle to define environmental education.

3. Use of Theory: Kelly Under Fire Over Kit

This activity is intended to introduce participants to different uses made of theory. The activity illustrates that education materials are not politically neutral and may become controversial.

Once case in point occurred in Australia with respect to the 1992 World Environment Day kit. The kit was commissioned by the Department of Arts, Sport, the Environment and Tourism and designed to raise awareness of environmental issues faced by the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro that year. It was withdrawn from use in schools a week before the Earth Summit in Rio began. The withdrawal of departmental endorsement was largely due to pressure by the Opposition Parties in parliament that the kit unfairly and inaccurately portrayed farmers.

The attack on the kit originated with the National Farmers Federation where it was felt that one section on *Land Management* failed to give due credit to those Australian farmers who embraced tree-planting and environmental care through such programs as Landcare.

The embarrassment to the government was enormous. The Minister had provided a glowing endorsement of the kit and the objectives of World Environment Day on its cover. She was then put in the impossible position of telling Parliament that she had endorsed the cover, not the contents. In addition, the Department, which originally intended the kit to be widely and freely disseminated, withdrew all official permission to use or reproduce its parts once it came under public scrutiny.

- Ask participants to continue working in their groups with a copy of Resource 2. Their task is to prepare a brief group report based on a newscutting and set of questions.
- To debrief, discuss that this issue appears a very clear example of the struggle over environmental education. However other responses are possible, especially since the struggle over who decides clearly carries an understanding about what environmental education ought to be.

  Farmers would probably find certain language offensive, such as animals 'that can hardly move packed into pens'. However, they would likely acknowledge problems they must deal with, such as algae growth, soil salinity, soil acidity, erosion, and absence of natural enemies to pests.

This activity should lead to the notions that (1) theory is political, and (2) that theory has a context of use that shapes meaning.

4. Use of Theory: Which Office is Greener?

This activity further explores the notion that theory has a context of use that shapes meaning.

- Ask the groups to now prepare a brief group report on the advertisement and questions on Resource 3.
- To debrief, discuss that ideas can be transferred from their original theoretical context to new settings with different vested interests. The adoption of ecological themes by particular economic groups may be seen as evidence of the successful penetration of ideas. On the other hand, it may be seen as a remaking

of ecological themes in ways that sanction particular social practices and set the political agenda.

5. Evaluating Resources - The ERDEE Assessment Tool

This activity introduces participants to the major dimensions and criteria of the Evaluation of Resources in Development and Environmental Education (ERDEE) assessment tool.

A. Mini-lecture

Present a 10-15 minute mini-lecture to the group to explain the rationale for the ERDEE assessment tool.

- **Education for sustainable living**

The term 'sustainable development' was originally used by the World Commission on Environmental and Development (WCED) in a report entitled *Our Common Future*. This report, also known as the *Brundtland Report*, established a renewed agenda for environmental education and development education and the linkages between them. The World Conservation Union (IUCN) described this new agenda as a program of education for sustainable living.

Many aspects of traditional approaches to environmental education contribute to education for sustainable living.

However education for sustainable living also requires a reconceptualisation of environmental education and some of its assumptions. For instance, much of the dominant discourse in environmental education has been based upon a technocentric approach to environmentalism which favours concepts and skills needed for finding scientific and technological solutions to environmental problems. Education for sustainable living attempts to address root social, political and economic causes as well (see Fien, 1993; and Reading 1).

- **Using the ERDEE assessment tool**

Distribute a copy of Resource 4 (the ERDEE assessment tool) and Resource 5 (the ERDEE checklist)

The ERDEE assessment tool attempts to bridge some of these conceptual gaps and help practitioners take account of new understandings when considering educational resources.

The ERDEE tool incorporates a 'knowledge' approach to education about sustainable development together with a 'skills and attitudes' approach to education for sustainable development. This strategy extends and promotes critical skills, values and actions to make education for sustainable development feasible.

The selection and assessment of environmental resources are based on four dimensions - knowledge, critical skills, attitudes and values. Each dimension contains core issues or concepts that are then defined according to criteria drawn largely from environmental and global interests as outlined in the Brundtland Report. The criteria acts as both a reference for environmental principles and as a model for action.

That is, the criteria represents a standard by which resources can be judged. Ideally, a 'good' resource that avoids stereotyping, for example, will: (i) present a range of

roles and human characteristics for any social group, (ii) include in-depth portrayals of sub-groups by accurate presentations of the group culture from the point of that group, and (iii) portray sub-groups as active participants in their community in a variety of decision-making situations. Equally, the criteria also imply that as practitioners or curriculum specialists, one should present a range of roles, include in-depth portrayals and portray sub-groups as active participants.

All four dimensions are needed to promote principles of sustainability. The area of human rights, for example, is as much a 'value', 'attitude' and 'critical' dimension as it is a 'knowledge' dimension. The indivisibility of these principles means that the criteria should be seen as interrelated. Given the interdependence of the dimensions, it is unlikely, in practice, that resources would meet criteria in isolation.

Effective use of criteria, however, also depends on a continued grasp of developments both in environmental education and in social theory. The critical reading included in this workshop represents an initial strategy in that appreciation.

B. Group Work

Distribute a copy of Resources 4 and 5 (the ERDEE assessment tool and checklist) to all participants. Ask them to prepare a brief group report on the questions in OHT 2.

6. Evaluating Resources: Large Dam Projects

This activity gives participants an opportunity to rate a resource using criteria from the ERDEE assessment tool and to further reflect on teaching for sustainable development.

- Give groups a copy of Resource 6 and ask them to prepare a brief group report on the questions on OHT 3.
- To debrief, discuss that a variety of ratings are possible depending on the criteria that is addressed. The group reporting method should yield a rich assortment of views.

The question should be raised whether conducting a class debate and 'voting as the United Nations' on a 'solution' is a politically effective way of representing United Nations process in determining competing interests and making political choices.

Groups are also encouraged to comment on the ease of use, or difficulty, with the application of the ERDEE checklist.

7. Evaluating Resources: Critical Reading

This activity illustrates that the effective use of the criteria from the ERDEE assessment tool depends on a continued grasp of developments both in environmental education and in social theory. The critical reading represents an initial strategy in that appreciation as well as the opportunity for further reflection on teaching for sustainable development.

- Ask participants to examine the concepts on Resource 7, an information sheet on urban life - past, present and future. Ask them to comment on its positive (and maybe not so positive features) as a teaching resource. OHT 4 should be used to guide group discussion.

- Present a mini-lecture based on the material in Reading 1. (Alternately, this could be an assigned reading).

  The key points to emphasise are:

  - the interesting parallel between the SEMP material and the World Environment Day Kit
  - how the materials are disposed toward popular ecological and environmental themes
  - how the popular ecological and environmental themes support themes of modernity and technological rationalism
  - how themes of technological rationalism displace serious questioning of social structure and social change.

- To debrief, present a concluding message to participants: educational resources need to be selected carefully.

  There are many features that are commonly included in the assessment of instructional materials that have not been covered by the ERDEE assessment tool. For instance, little attention is given to cost factors, availability, durability, attractiveness, readability, format, and layout.

  Evaluation, in the context under consideration, is understood as a process of generating useful information about the quality of the resources in order to make educational decisions.

  In the current political climate of accountability, standards and competencies, practitioners and curriculum specialists need to be able to justify resource and teaching decisions on strong educational grounds. The criteria in the ERDEE assessment tool are sufficiently detailed as to enable educationalists to clearly specify the core concepts of ecological sustainability that resources might develop or lack. The criteria are also open-ended enough to support professional judgement.

  Above all, it is hoped that the criteria are challenging and will help promote a continuing dialogue and critique.

OHT 1

Aims and Outcomes

The aim of this workshop is to:

- develop strategies of analysis for evaluating text based content, and
- assist in the selection and utilisation of materials and resources for classroom use in the interests of environmental and development education.

At the end of this session, you will be able to:

- understand the four dimensions of the ERDEE assessment tool
- select appropriate criteria for the evaluation of resources
- rate resources using the ERDEE assessment tool.

OHT 2

Prepare a brief group report on these questions:

1. Highlight one criterion that is most relevant to your teaching area from each of the following dimensions:
   - knowledge
   - critical skills
   - attitudes
   - values

   Justify and explain your choice to other group members.

2. Highlight one criterion that has least relevance to your teaching area.
   Justify and explain your choice to other group members.
   Does the group agree?

3. Are there other dimensions or criteria that you feel should be included in this assessment tool?

OHT 3

Prepare a brief group report on these questions:

1. Which of the Student Exercises address the following ERDEE dimensions:
   - knowledge?
   - critical skills?
   - attitudes?
   - values?

2. Which of the Student Exercises did not fit any of these dimensions?

   Why?

3. Refer to Student Exercise 5. What are the benefits and problems of conducting (i) a class debate? (ii) a class vote?

4. Rate the educational quality of Resource 6 using the ERDEE checklist.

5. What action would you recommend to the author - or teachers who might use this resource?



OHT 4

Prepare a brief group report on these questions:

1. What are the main criticisms made about the broadsheet?

2. Do you agree with the conclusion?

3. Which criteria from the ERDEE assessment tool are addressed?

4. Which other criteria could have been utilised?

5. What action would you recommend for Resource 7?

RESOURCE 1

THE ROLE OF THEORY



Australian Financial Review, May 14, 1992.

Prepare a brief group report on these questions:

1. What are the components of this cartoon? Note people, objects, events and ideas.
2. On the cartoon page, write down at least two questions for each of these components. Direct your question with an arrow to the relevant component.
3. What does the cartoon say about *theory*?
4. Do you agree? Could that person in the cartoon be you?
5. Give three examples of how theory applies to your area of teaching.

RESOURCE 2

KELLY UNDER FIRE OVER KIT

Kelly under fire over kit

By AMANDA MEADE

CANBERRA: The Minister for the Environment, Mrs Kelly, has refused to accept responsibility for a bungle in her department involving an information kit which portrays farmers as destructive polluters of the environment.

Mrs Kelly yesterday withdrew her support for the kit commissioned by her department – the Department of the Arts, Sport, the Environment and Tourism – to teach schoolchildren about World Environment Day.

Earlier she had endorsed the kit in a radio interview on the ABC.

In it she had defended the section on land management against the allegations of imbalance levelled by the Deputy Leader of the Opposition, Mr Bruce Lloyd.

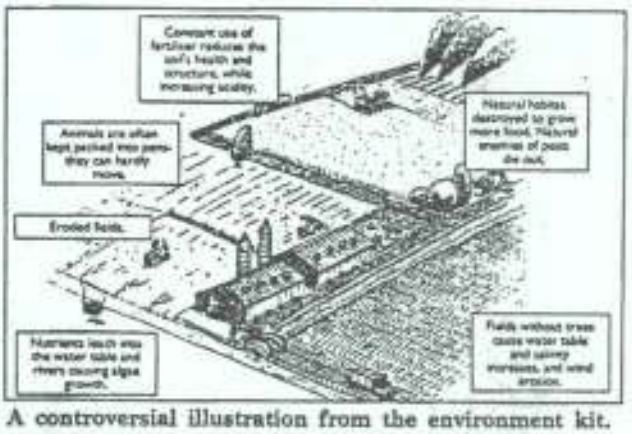
"All I'm doing in this document is highlighting that an international environmental problem is land degradation," Mrs Kelly said.

Mr Lloyd had said that the kit was "a deplorable attack on Australia's farming community".

"In my 20 years in Parliament, I have never seen such an unbalanced, misleading and divisive document as that sanctioned by the minister," he said.

The kit failed to mention farmers' efforts in recent years to improve the environment and to take part in the Government's Landcare program.

Mrs Kelly also came under heavy fire from the Opposition during Question Time as she failed to explain to Parliament why she endorsed a kit that she later said was unbalanced and inaccurate.



A controversial illustration from the environment kit.

Her explanation, that she had endorsed the kit's cover but *not* its contents, caused uproar in the House.

The kits – 5,000 of which have already been distributed to 12,000 schools across the country at a cost of $50,000 – carries Mrs Kelly's smiling face on the cover.

It has a letter signed by Mrs Kelly which reads in part: "I am confident that this kit will provide an excellent environmental resource, particularly in the lead-up to the Earth Summit and World Environment Day 1992."

After the radio interview on Wednesday, Mrs Kelly was telephoned by the Minister for Primary Industry, Mr Crean, who told her the National Farmers' Federation was angry over the what they saw as insulting material in the land management section.

Only then did Mrs Kelly withdraw her endorsement and inform the Opposition she had done so.

Mrs Kelly attended a function in Parliament House yesterday where she was supposed to have endorsed the kit; instead, she gave certificates to school students.

She told reporters there: "I do not accept responsibility for a document that I didn't even see, let alone approve.

"The fact of the matter is, the department made a mistake. The department did not check it even at senior levels."

She said she was not to blame for the offensive material contained in the kit, because at no time had she approved it.

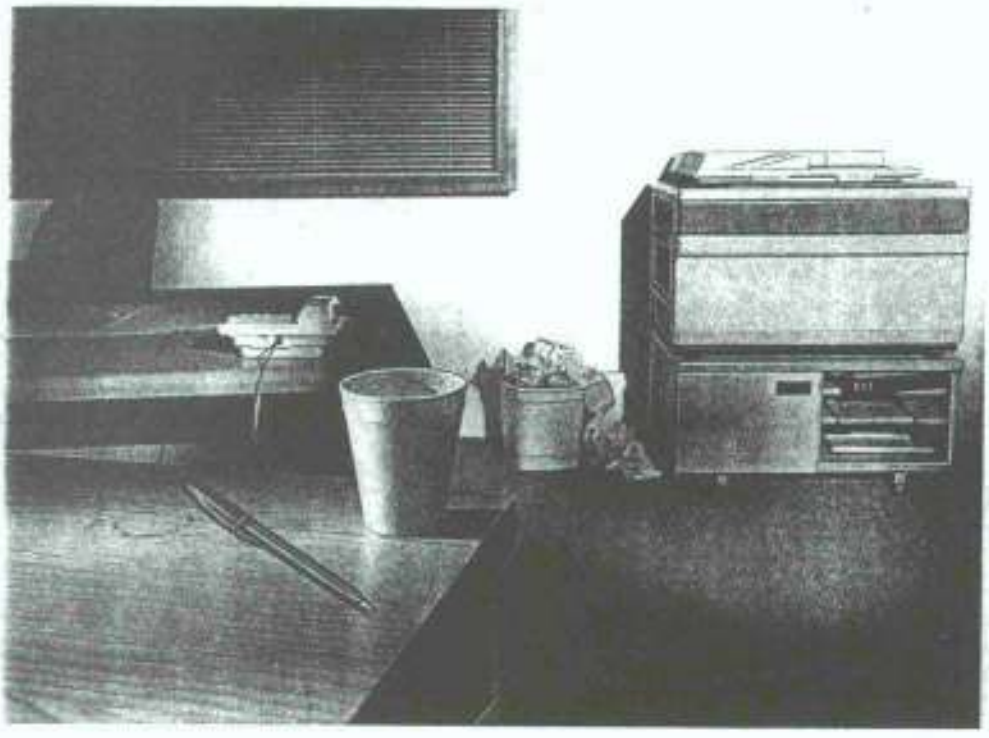
Sydney Morning Herald, May 29, 1992.

Prepare a brief group report on these questions:

1. Give an example of how the newspaper article, *Kelly Under Fire Over Kit*, makes use of :
   - Theories *about* environmental education
   - Theories *in* environmental education
   - Struggles *over* environmental education
2. Look at the controversial illustration taken from the environment kit.
   - Does the illustration suggest that all farmers are destroying the environment?
   - Which issues might farmers find offensive? Which issues might farmers be in agreement with?
3. What does this controversy tell you about the politics of knowledge?
4. In your country, what is the accepted practice with respect to school textbook selection and distribution? Do persons or committees need to approve textbooks or curriculum resources? Provide any similar experience of a 'politics of knowledge'.

RESOURCE 3

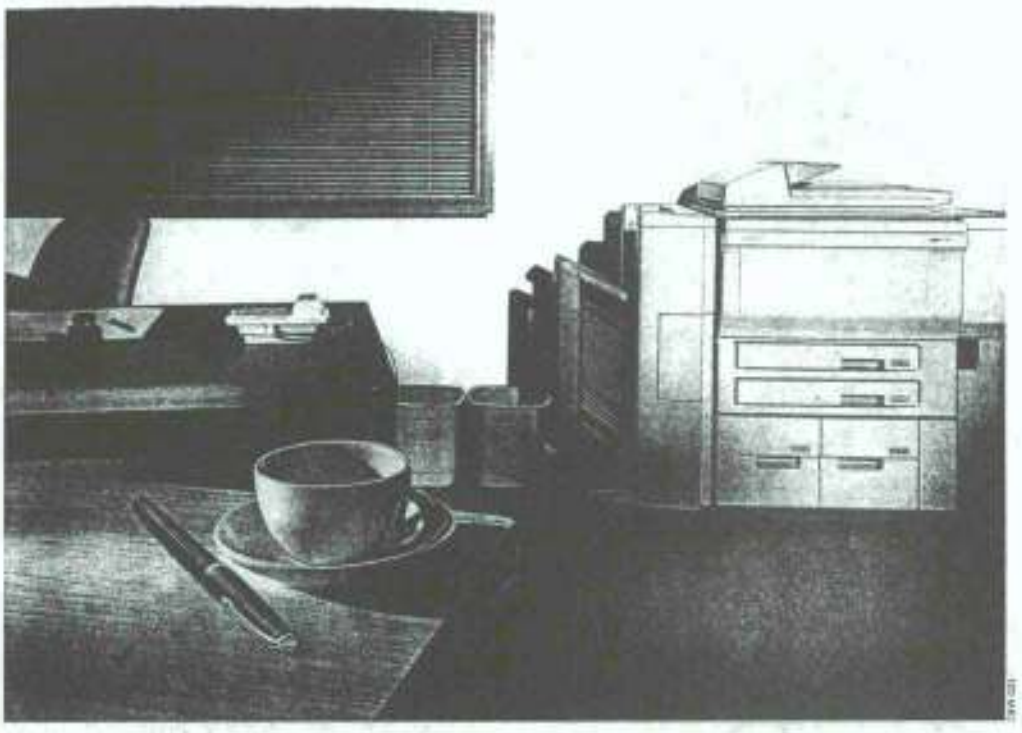
WHICH OFFICE IS GREENER?



WHICH OFFICE IS GREENER?

Prepare a brief group report on these questions:

1. How does the advertisement invest in the discourse of the environment?
2. Does this advertisement exploit the discourse of the environment?
3. What does this tell you about the use of theory in everyday life?



Some offices are friendlier to the environment than others.

Some offices have ceramic cups, which you wash and use again, unlike polystyrene cups.

They have people who use fountain pens. When a pen runs dry, it's not thrown away, it's refilled.

They have better insulation, so they need less energy to stay warm or cool.

They have a special bin for waste paper, which can be recycled.

And they have a Canon copier.

What makes Canon environmentally friendly?

For a start, all our copiers are capable of using recycled paper. Unlike some copiers, they can use it for both single and double-sided copying.

Our personal copiers and laser printers have replaceable cartridges, which makes them maintenance-free. What's more, they're totally recyclable.

And every time a cartridge is returned to us for recycling, Canon donates a dollar to the environmental group, Earthwatch.

This is part of our Clean Earth campaign, launched in April last year, which in turn is part of Canon's three R philosophy: reduce, reuse, recycle.

Our copiers have filters to cut down ozone pollution to well below acceptable levels.

Their drums have non-toxic coatings for safer handling and disposal, and the aluminium in them is recyclable.

Their toner is non-carcinogenic, which makes it a great deal safer for people and the environment.

Why, even the wasted silicon oil from a Canon copier is refined, filtered and bottled.

Impressed? We aren't. It's still not enough.

So we're developing solar cells as a cleaner energy source for the future, and new copiers which can be entirely recycled.

The challenge is to stop polluting and destroying the environment. As we hope we've proved, Canon is rising to it.

Canon
THE BIG GUN IN COPIERS

And the greener office (it's on the right, of course) is just a start.

Advertisement reprinted courtesy of Canon Australia, Pty Ltd.

RESOURCE 4

EVALUATION OF RESOURCES IN DEVELOPMENT AND ENVIRONMENTAL EDUCATION (ERDEE) ASSESSMENT TOOL

Resource: _____

Rate As: '1' MEETS criterion

'2' SOME attention to criterion

'3' NO attention to criterion

KNOWLEDGE CRITERIA Resources should contain essential elements of core concepts	Rating
Development Issues • Sustainable Development Presents the need for balance between economic growth and social development in the interests of sustainable development and overcoming of poverty and social injustice.	
• Environment and Development Presents the importance of ecological balance against the effects of environmental destruction and the need to balance economic growth and conservation through a process of sustainable development. Presents the importance of biodiversity and sustainability.	
• Rights and Development Presents individual rights and responsibilities as citizens of local, national and global communities. Supports the need to eliminate discrimination and other threats to human rights from various sources. Presents the rights of all species as essential for biodiversity and sustainability.	
• Green Aid Presents aid projects that promote economic development in an environmentally responsible manner. Presents benefits to both donors and recipients.	
Global Perspective Presents the interdependence of global economic, social and political systems. A selected global perspective reflects the principles of economic justice, human rights, sustainable development and peace.	

Overall _____

CRITICAL SKILLS CRITERIA Resources should help participants challenge bias, support rational decision making, examine solutions and prospects for change	Rating
Balance Issues • Comprehensiveness Includes a range of social-cultural viewpoints. Sensitive to explanations of social structure. Can distinguish between description and explanation.	
• Stereotyping Presents a range of roles and human characteristics for any group. In-depth portrayals of sub-groups include accurate presentations of the group culture, from the point of view of that group. Sub-groups portrayed as active participants in their community in a variety of decision-making situations.	
• Misrepresentation and Validity Does not present unsubstantiated 'factual' claims as 'truths'. Sources are verifiable, accurate and up-to-date. Does not include misleading implications.	
• Technology Does not imply that the world's major problems can be solved by further development of industry and technology. Identifies technology as part of the technical-social complex of productive forces. Technological solutions to social issues are seen in their political, economic and social context.	
Interdependence Encourages students to analyse an issue in its connection with the wider ecological, economic, political and social environment. Presents individuals and communities as linked.	
Decision-Making Presents conditions for rational decision-making. Emphasises inquiry process of hypothesis and generalisation, cooperative learning, critical reflection, dissemination, and involvement and action.	
Problem-Solving Evaluates the relevance, validity and implications of alternative solutions. Presents the interests and values underlying various solutions. Supports a multi-disciplinary approach.	

Overall _____

ATTITUDES CRITERIA Resources should help promote understanding and solidarity among all peoples	Rating
Empathy Sensitive towards the viewpoints and feelings of other people, particularly those belonging to groups, cultures and nations different from our own.	
Respect Supports the development of self-respect and respect for others, particularly those with national, cultural and family backgrounds different from our own.	
Participation Supports solidarity with victims of injustice in one's own and other societies. Supports participation in political decision-making at local, national and international level. Supports solutions toward major world issues through cooperation at levels of individuals, organisations and nations.	

Overall _____

_____

VALUES CRITERIA Resources should help participants develop a commitment to working with and for others in the interests of equality, equity and sustainability	Rating
Social Justice Examines inequalities of wealth and power. Presents efforts to redress them through development, aid, trade and technology.	
Equality of Peoples Presents the principles of equality and democracy which underlie a belief in the equality of all peoples, as the right of all peoples to life, freedom and self-determination.	
Ecological Sustainability Presents biodiversity as a right of all living species and as a basic principle of sustainability. Presents intra-generational and inter-generational equity as a right of present and future generations and as a basic principle of sustainability. Presents the satisfaction of essential human needs and aspirations as a priority and as a basic tenet of development.	

Overall _____

_____

Adapted from:

Association for Curriculum Development and Supervision (ASCD) *Developing Instructional Materials for a Pluralist Society*, mimeo.

Calder, M. and Smith, R. (1991) *A Better World For All: Development Education for the Classroom*, Australian Development Assistance Bureau, Canberra.

UNESCO (1991) *The Development of Criteria for Textbooks and Curricula on the Major Problems Facing Mankind*, Unpublished report from UNESCO International Experts Meeting, Griffith University, Brisbane.

World Commission on Environment and Development (1987) *Our Common Future*, Oxford University Press, Oxford.

RESOURCE 5

EVALUATION OF RESOURCES IN DEVELOPMENT AND ENVIRONMENTAL EDUCATION (ERDEE) CHECKLIST

Resource:

Publishing Date: _____
Publisher: _____
Cost: _____
Course: _____
Course Level: _____

Focus:

- ☐ Entire Resource
- ☐ Chapter/ Section
- ☐ Activity/ Item(s)

Format:

- ☐ Text
- ☐ Video
- ☐ Audio
- ☐ Software
- ☐ Other _____

Rating on Dimensions	Meets Criterion	Some Attention to Criterion	No Attention to Criterion
	(refer to ERDEE assessment tool for details)		
Knowledge			
1.1 Sustainable Development	☐	☐	☐
1.2 Environment and Development	☐	☐	☐
1.3 Rights and Development	☐	☐	☐
1.4 Green Aid	☐	☐	☐
1.5 Global Perspective	☐	☐	☐
Critical Skills			
2.1 Comprehensiveness	☐	☐	☐
2.2 Stereotyping	☐	☐	☐
2.3 Validity	☐	☐	☐
2.4 Technology	☐	☐	☐
2.5 Interdependence	☐	☐	☐
2.6 Decision-Making	☐	☐	☐
2.7 Problem-Solving	☐	☐	☐
Attitudes			
3.1 Empathy	☐	☐	☐
3.2 Respect	☐	☐	☐
3.3 Participation	☐	☐	☐
Values			
4.1 Social Justice	☐	☐	☐
4.2 Equality of People	☐	☐	☐
4.3 Ecological Sustainability	☐	☐	☐

Recommended Action:

_____ Reviewer: _____

_____ Position: _____

_____ Date: _____

RESOURCE 6A

WALLS OF WATER

Source: Adapted from Fien, J. (1989) *Living in a Global Environment*, ACTA Inc., Brisbane, Activity 26.

'SO long as the sun and moon are there' was the old Sinhalese way of saying that the land and works of the village would always be there. Life in a village of Sri Lanka's dry zone revolved around three vital elements: the *dagoba* (temple), the *ketha* (padi-field) and the *wewa* (water tank). The irrigation tanks could be found in the jungle, in the mountains and in the villages, and they were so important that *wewa* came to be synonymous with the word for village.

There were many different kinds of *wewa*. There was the forest tank, for instance, which was built not for irrigation but to provide water for animals and stop them wandering into the padi fields in search of a drink. Then there was the erosion control tank or *pota wetiye* which was designed to catch silt before it entered the two main water storage tanks.

This was an irrigation system that worked well for hundreds, even thousands of years. The great ancient capitals of Anuradhapura and Polonaruwa rose and fell. Kings built huge water tanks for ornamental purposes that augmented their status but silted up and became grand, useless follies. But the village irrigation system went on undisturbed, ever renewing itself – in harmony with the earth and the people.

In the nineteenth century the British came. Much of the land was confiscated and sold off in five-acre plots. This has since made collective maintenance of the irrigation channels much more difficult – just as it has promoted factionalism and divisiveness. Now there are chronic water shortages and land that once gave two crops a year now only yields one.

When the British finally departed they left behind them a society with new aspirations, one that quite rightly wanted to take its place in the modern world, with equal access to its industrial wonders, its electricity. A new vision of irrigation was dreamed up. The old *wewa* system was primitive, they said. What we need is a dam project that will block the Mahaweli River and provide water for our fields and electricity for our factories. The British Government funded one of these, the Victoria Dam, out of its foreign aid budget and proclaimed its pride in this prestige project. Prince Charles and Princess Diana came to visit. President Jayewardene staked his political future on its success.

So the devastation began. The Mahaweli project will require over a million people to be moved – one sixteenth of Sri Lanka's population. Resettled families will get just 3,000 rupees ($110) plus one hectare of forest in compensation. The cost has soared from 1,250 million dollars to 2,800 million dollars, strangling Sri Lanka's economy with debt repayments.

And as the cost mounts, so does the evidence against large dams. There is no chance that the Mahaweli dams will outlive the *wewa* – let alone the sun and moon.

All material from **The Social and Environmental Effects of Large Dams** *by Edward Goldsmith and Nicholas Hildyard (Wadebridge Ecological Centre)*



RESOURCE 6B

VOICES AGAINST THE FLOOD

Source: *New Internationalist Calendar*, April 1988.

Voices against the flood – a protest against the construction of the Chico Dam in the Philippines.

The building of large dams often forms a major part of a Third World country's development plans. This is encouraged by the World Bank, 38 per cent of whose agricultural development loans have been for irrigation projects. Both donors and local politicians are enthusiastic about dams because:

- They are prestigious.
- They supply electricity/hydroelectric power in a way that does not make the country dependent on expensive oil imports.
- They allow extensive irrigation systems which can produce more food.

But large dams also cause great damage – damage which far outweighs their benefits.

Dams can be big

- Some huge reservoirs produced by dam projects since 1945 are the only human-made things visible from outer space.

The Aswan Dam in Egypt is 17 times heavier than the Great Pyramid of Cheops.

The Volta Reservoir covers nearly one-half of Ghana's land area and is 40 times the size of Lesotho.

Chinese Yangtze dams project will displace 1,400,000 people – the equivalent of the entire population of Australia's city of Sydney.

Nasty side-effects

Reservoirs flood large areas of land, destroying the culture and health of indigenous people.

- In Brazil, eight planned hydro-electric projects are expected to flood between 91,000 and 351,000 hectares of Indian lands, threatening the livelihood of 34 indigenous tribes.

The flood engulfs forests and productive farmland, and ruins previously fertile land.

- Between 1950 and 1973 India lost 479,000 hectares of forestland to dam projects. The Sriselam project alone flooded 43,000 hectares of farmland which had provided a livelihood for 100,000 people.

Fertility is lost as over-irrigated land becomes a salty desert.

- At least 50 per cent of the world's irrigated land now suffers from salinization. Between 200,000 and 300,000 hectares of irrigated land are taken out of production every year because the earth has become too salty.

The health of people in all irrigated areas, not just on the region of the reservoir, is threatened by waterborne diseases such as schistosomiasis and river blindness as well as malaria mosquitoes which breed in sewage conditions.

- The building of the Aswan Low Dam in Egypt caused local schistosomiasis rates to rise from 21 per cent to 75 per cent.

Where do we go from here?

Those who benefit from a dam – from its electricity and the export crops fed by its irrigation – tend to be urban elites and multinational corporations rather than the poor.

- Iran's Dez Dam was supposed to provide 80,000 hectares of irrigated land to small farmers in Khuzestan. Instead almost all the land went to transnational sugarcane plantations producing crops for export. The scheme displaced 17,000 peasants.

Silting – the accumulation of earth carried into reservoirs by rivers – means that reservoirs in tropical climates can very quickly become clogged and useless.

- In China, the Sanmenxia Reservoir was constructed in 1960 but had to be abandoned in 1964 due to premature silting. The Liuyong Reservoir actually silted up before its dam was completed.

Dams have until now been considered a clean way of producing electricity. But we are only now realising the enormous damage they cause. The way forward lies in research into wind and wave power for temperate countries, and solar power for tropical countries.

Irrigation is now considered essential to increase food production. But it is counter-productive if rising salt levels make the earth unusable by future generations. Irrigation schemes must at least take into account the need for drainage.

In the meantime, the bigger dams are, the more problems they cause. We should stop building large dams for the sake of prestige and concentrate on small, manageable projects where the environmental damage can be limited.

RESOURCE 6C

STUDENT EXERCISES

WALLS OF WATER

1. Read the passage, *Walls of Water*, and answer the following questions:
   - Why did the Sri Lanka dry zone revolve around the three vital elements of dagova, ketha and wewa?
   - Explain why two different types of wewa were built.
   - What was the difference in terms of effectiveness between local irrigation systems and the grand designs by Sinhalese royalty?
   - What changes did the British make in the 19th century and what was the result of their intervention?
   - Describe the effects of the Mahaweli Projects.
2. Why do you think the authors pick on Sri Lanka as an example of old and new irrigation projects?
3. What do the authors think about the 'colonial system'? What evidence do they offer to support their views? Is this a fair treatment of the 'colonial system'?

VOICES AGAINST THE FLOOD

1. Study the graphic from *Voices Against the Flood*.
   - On a copy of a world map, locate the large dam projects and label each project using the most important ideas in the graphic.
   - List the negative side effects of large dam projects.
2. Summarise the risks connected with large bodies of standing water under the following headings:
   - health
   - siltation
   - salination
3. Why were the people of The Philippines so united in their opposition to the Chico project? To what lengths would they go to try to stop the project?
4. Do you think this exercise is biased against the builders of big dams? How might supporters of big dams present their arguments?
5. Imagine your class is the United Nations. Conduct a debate and have a class vote on whether big dam projects should be allowed to be constructed.

RESOURCE 7

A CITY IS ... PAST, PRESENT, FUTURE

Source: Social Education Materials Project, Urbanism Team (1978) *People and the City* (Urbanism 1), Heinemann, Richmond.

This resource is provided on the next two pages and could be photocopy enlarged to the original A3 size.

a city is...

PAST

The Urban Process

Leonard Reissman

The problems faced by cities today were conceived in the past, and the problems of tomorrow are being created today and taking the same forms as those of the past. What has been learned from the past is applied to the present too slowly and too late.

How true is this?



The Federal Coffee Palace, corner of Collins and William Streets. 1880's. Demolished 1972.

PRESENT



The corner of Collins and William Streets, 1978.

FUTURE



The corner of Collins and William Streets ?

S.T.M.P. - URBANISM

25.25

RESOURCES

. . . with increasing frequency, it is acknowledged that Australian history is important to Australians, important enough to matter a great deal. The rapidity with which change overcame Australia in its relatively brief existence makes an understanding of it both more difficult and more important. Those 200 years really equate to a much longer period in other circumstances. The last 200 years have held more momentous changes for everybody, than any similar earlier period, but life here was also jolted from a sleepy colonial existence into world-connected importance by the gold rushes.

D. Saunders, 'Man and the Past', in A. Rappoport (ed.), *Australia as Human Setting*.

* How important is it to know about the past in order to understand the present?
* How important is it to understand the present in order to plan for the future?
* Should we plan for the future or just 'let it happen'? What are some of the dangers of not planning? What are some of the problems relating to planning?
* What does 'progress' mean to you? Does taking an interest in the past ever run counter to this?
* Find an example in your city, or in a book, of preservation of the past being integrated into future planning.



* Identify the activities shown here.
* What are some of the modern equivalents? Search newspapers or magazines for photographs or take them yourself.
* Which of these activities are not found now? Why?
* Are we poorer for losing such people and activities from our streets?

Discussions

Transformation and adjustment in technological society is so rapid that past, present and future melt into one, thus giving the systematic prediction of future events equal weight with the interpretation of the past.

S. Chermayeff & A. Tzonis, *Shape of Community*.

* What do the authors mean when they talk of the past, present and future melting into one? Does this make sense?
* How can we ensure responsible attitudes towards the future? Should we?



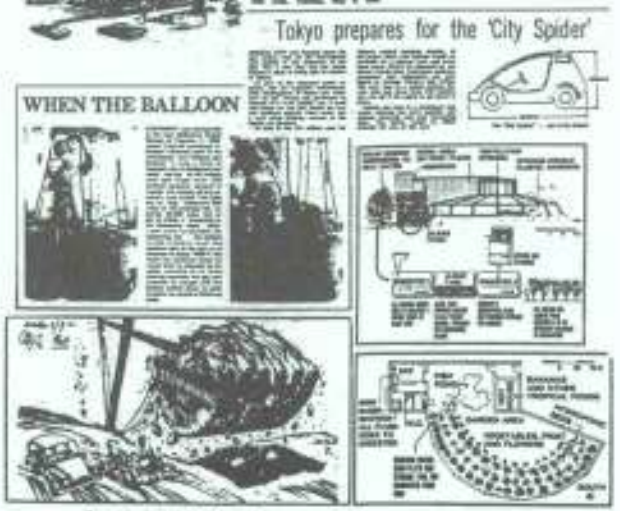
Time: If we are going to plan for the future of our cities we have to decide how far ahead we should aim and how much we sacrifice today's convenience for tomorrow's pleasure.

M.T. Daly, 'The Planning of Cities', in *Australia as Human Setting*.

* Which of today's conveniences should be sacrificed for the sake of tomorrow? How easy do you think it would be to persuade people to give up such things?
* Select one object which is found in a city (e.g. a house) and trace its past to the present. Also predict its future.
* List sports that exist today that weren't enjoyed 100 years ago? How do you account for the change?
  Design a sport that would be suitable for your idea of future society.
  Can you imagine anything completely new and different?
* Do the same for other aspects of social life, such as entertainment, work, play, etc.



From [illegible]





"A second hand model of the Brave New World"?

* What 'signposts' of possible future technology can you see on this card? How far away do they seem?

Many people today say no longer cope with the complex artificial urbanised society which they have themselves created and seek instead a more simplistic and self sufficient lifestyle.

T.L. Blair, *The International Urban Crisis*.

* Is this a future possibility for all Australians?
* Consider the possibilities of a 'more simplistic and self sufficient lifestyle'.
* What does this mean? Design ways to make your lifestyle simpler and less reliant on the 'complex, artificial' aspect of urban living.

  This could include doing away with constant use of cars, overuse of electricity, etc.



* Design a future city in which city problems have been solved. Use your imagination.
* What present day buildings and systems would you retain? Present your design to your class.



READING 1

COMMENTARY ON 'A CITY IS ... PAST, PRESENT, FUTURE'

Background

The resource material *A City Is ... Past Present Future* is one of 25 poster-size broadsheets contained in an urbanism kit, *People And The City*. The kit formed part of the Social Education Materials Project (SEMP), an Australian national initiative in the 1970s aimed at producing quality teaching materials about social issues, for use at secondary schools.

An interesting parallel exists between the SEMP materials and the Australian 1992 World Environment Day Kit (Resource 2). Both were ambitious projects, seeking to raise consciousness and awareness of important social issues. Both were the subject of controversy and notoriety. In the case of SEMP, the ultra-conservative government in the state of Queensland banned the *Family* kit from use in its State Schools.

The attack on the kit originated from the fundamentalist pressure groups, STOP (Society To Outlaw Pornography) and CARE (Campaign Against Regressive Education), that claimed the *Family* materials promoted humanist values and anti-social behaviour, as well as undermined Christian values and family life.

The impact on the SEMP project was enormous. A vigorous campaign for the re-instatement of the *Family* kit in Queensland proved unsuccessful, and the campaign effort diverted precious resources away from SEMP's national dissemination work. Together with delays in publication and other difficulties that beset implementation, the project floundered.

Introduction

The broadsheet *Past Present Future* is selected for a critical reading because (i) environmental issues are addressed in the context of rapid technological change and planning for the future and (ii) the adoption of a simpler lifestyle is assumed to be an appropriate response to environmental issues that can bring about social change.

Environmental questions can, and should, challenge fundamental social relations of production and power. The point of this critique is to highlight the problem that the mere adoption of an environmental position, such as supporting a simpler lifestyle, may not necessarily secure the kinds of understandings that can seriously question social structure and that can work for social change.

The Ideology of the Environment

Manuel Castells, a prominent urban theorist, depicted an 'ideology' as a distorted set of ideas about society or social structure, that masked social class conflict and legitimised dominant interests. He asserted that the ideology of the environment, and in particular much of the work of the human ecology movement, contributed to these social effects.

In particular, he claimed that many theories of the environment were apolitical, since questions about social tensions and deficiencies were explained without reference to social contradiction or social production; universalist, since idealised relations between 'man', 'nature' and 'technology' formed the basis of social explanation; and scientist, since questions about social inequality were transformed into questions about physically harmful effects with observable and quantifiable dimensions that implied technical, rather than political, remedy. Technology was therefore seen as the source of social problems and the basis of social transformation. In this way, 'protection of the environment' against the misdeeds of technological progress was essentially misconceived.

The crucial role of technology in urban growth, especially through advances in communications and developments in production, certainly ought to be acknowledged. It is important, however, that urban and environmental crises are not depicted as the necessary result of technological progress. Technology should be seen as one element of the total productive forces, and as such, an expression of advanced capitalism and mass society.

Towards a Simple Lifestyle

The resource *Past Present Future* raises the possibility of a simple lifestyle as one approach to manage and redress environmental problems. The broadsheet asks students:

- Is this [a simple self-sufficient lifestyle] a future possibility for all Australians?
- Consider the possibilities of a 'more simplistic and self-sufficient lifestyle'.
- Design ways to make your lifestyle simpler and less reliant on the 'complex, artificial' aspect of urban living.
- This could include doing away with constant use of cars, over-use of electricity, etc.
- Which of today's conveniences should be sacrificed for the sake of tomorrow? How easy do you think it would be to persuade people to give up such things?

These questions certainly raise discussion about responsibility for environmental problems in the context of change.

However, it is 'the individual' who is seen as the necessary site of social change.

And if we accept for the moment Castells thesis, that ideologies of the environment place responsibility for environmental problems onto the 'urban phenomenon', and ultimately on each citizen, then we can see how the broadsheet implicitly supports this ideology. In the above examples, students consider the sacrifice of today's conveniences for the sake of the future and how one's own lifestyle might be less reliant on the 'complex artificial' aspects of urban living. The solution places onus on the consumer to relinquish certain comforts and for consumers to do more with less. Appropriate 'action' that can be taken is through civic-minded self discipline, by 'good' ecological, biological and, of course, social behaviour.

Towards the Future

Teachers may often find it appropriate, as a creative exercise, to let student imagination run wild when thinking about the future. The resource *Past Present Future* similarly encourages readers to think futuristically in this way. What is at stake here, however, is an implicit support for the ideology of the environment.

Throughout the broadsheet the future is depicted by technological marvels: Consider the following collage of headlines that illustrate the broadsheet:

- Robot Slaves Mass-Produced.
- Whole City Powered by Solar Energy.
- City Fits Autopaveways.
- Synthetic Supermarket Opens.
- Scientist Teaching Children To Thought-Read.
- Tokyo prepares for the 'City Spider'.

The future implies the distant future. The future suggests novelty. The question, 'can you imagine anything completely new and different' in designing a sport that would be suitable 'for your idea of future society', would tend to encourage an outlook far removed from present, everyday social life.

Making predictions, then, is tantamount to making forecasts in a way that does not inform, explain or transcend present society. Prediction validates planning and technocratic rationalism as the legitimate instrument to 'correct' social problems. This is the clear message of the following quest for a solution:

- Design a future city in which city problems have been solved. Use your imagination.

Rapid Change

Not only is analysis removed from present, everyday social life, but a sense of urgency about the 'technological' threat is set up at the same time. The prophetic appeal by the two cartoon characters to do 'something - and quick' bears the warning that technological domination may destroy man and/or nature. Extracts from expert opinion, quoted in the broadsheet, cautions readers about the alarming speed at which technological transformation has occurred:

> *Transformation and adjustment in technological society is so rapid that past, present and future melt into one thus giving the systematic prediction of future events equal weight with the interpretation of the past.*
>
> S. Chermayeff & A. Tzonis, *Shape of Community*

The ideology of the environment is further supported by the confusion set up between notions of progress and development. Development is utilised here as a level (technological, economic) rather than as a process (qualitative transformations of social structure), with the result that social change or structural transformation is presented as an accumulation of technological and material events. When understood as levels of technology, the need to examine social differences and social structure is diminished

Planning and Technology as Instruments of Change

Planning (rational, neutral and scientific) is seized as the remedy for social crises. In the following broadsheet activity, the political context in which planning operates is displaced by the hint that students should think creatively:

- Design a future city in which city problems have been solved. Use your imagination.

Planning can therefore replace social and political debate.

The following broadsheet questions support the legitimacy of technological solutions to what are essentially political problems. The need for planning arises out of the terror of disorganisation:

- Should we plan for the future or just 'let it happen'?

  What are the dangers of not planning?

  What are some of the problems related to planning?

Technocratic rationalism is accepted as the motor of social transformation.

Conclusion

The mere adoption of an environmental position, such as supporting a simpler lifestyle, may not necessarily secure the kinds of understandings that can seriously question social structure and that can work for social change. Given a context where the individual is seen as a site for social transformation, and where planning and technology areseen as the forces of social change, the adoption of a simpler lifestyle may well contribute more to social intergration.

PERSONAL POWER *and* PLANETARY SURVIVAL

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INTRODUCTION

This workshop seeks to enable participants to explore their feelings surrounding a range of global and environmental issues and to empower them to contribute professionally and personally to changes directed towards planetary survival. Acknowledging and confronting our pain and other strong feelings about the world is important for our own empowerment and for social and global transformation.

Education must address both the cognitive and affective domains and should empower people to act. Individual development begins with an acknowledgment and acceptance of the individual's existing ideas and feelings. As human beings we are not always rational. Our feelings frequently influence our behaviour. Our inner lives influence our outer ones. In our educational activities it is important that our means and ends should be consistent. Our methods should match our objectives and there should be congruence between our theory and our practice. Our educational efforts to facilitate the attainment of their full potential by each individual should recognise that every human being is unique and has a special contribution to make to the world.

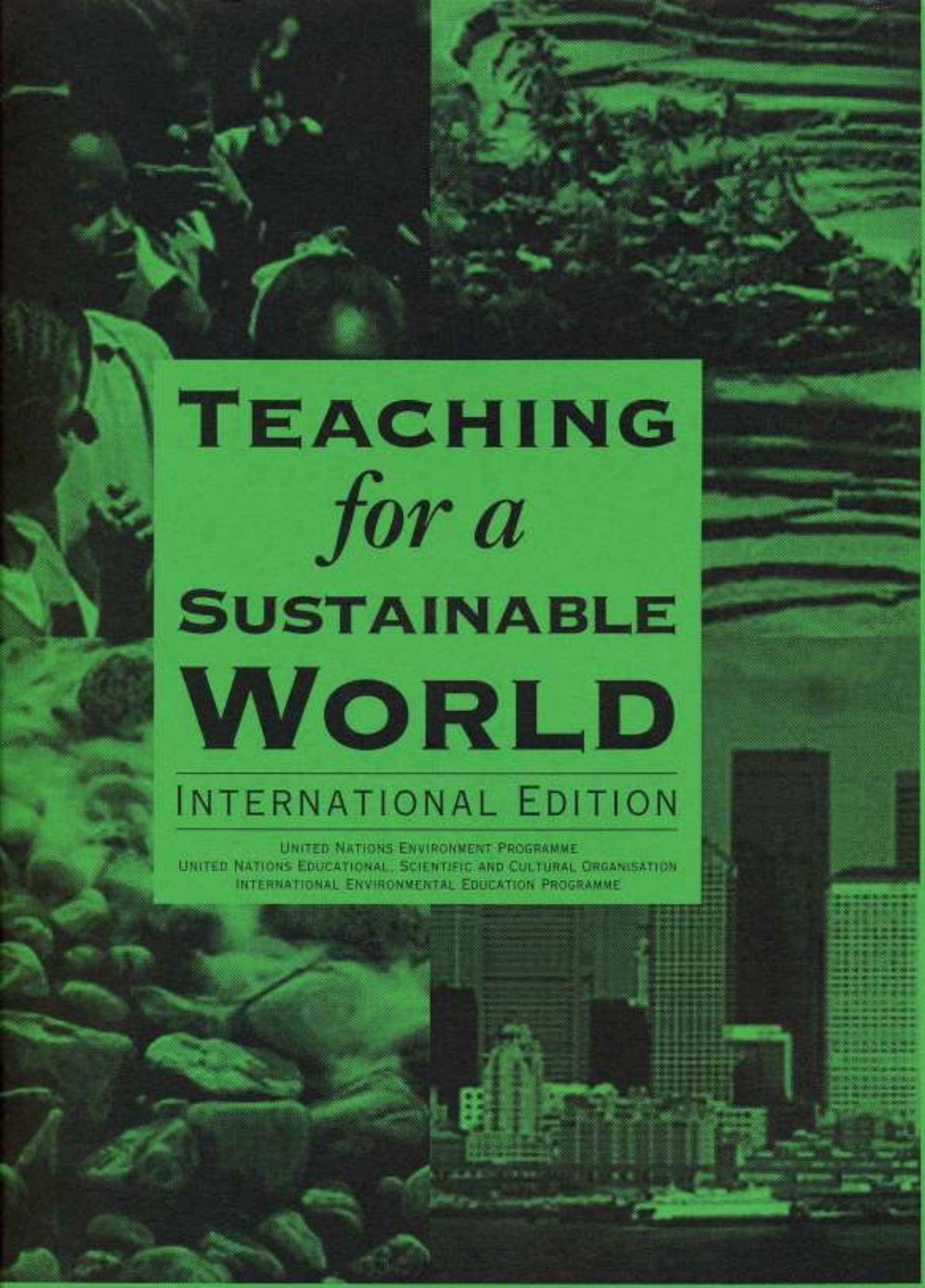
OUTCOMES

During this workshop, participants will begin to:

- acknowledge their feelings concerning environmental problems and their responses to them;
- feel able to take some action to bring about change; and,
- relate their experiences in this workshop to their future work as teachers.

WORKSHOP OUTLINE

There will be a series of activities to help participants acknowledge and address their awareness and feelings concerning environmental issues, and to enable them to find ways in which they can act to contribute constructively to global, national and/or local changes which contribute to environmental sustainability.



MODULE 26

TEACHING *for a* SUSTAINABLE WORLD

INTERNATIONAL EDITION

UNITED NATIONS ENVIRONMENT PROGRAMME
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION
INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

UNEP
AusAID
GRIFFITH UNIVERSITY

1. Introduction

A. Initial Activity: Participants introduce themselves and indicate to the group one of their strengths and/or the group plays the game 'Envirobingo'. This game enables participants to identify other members of the group who act in an environmentally conscious way.

B. Overview: The workshop structure is outlined and the underlying assumptions and 'ground rules' discussed.

C. Song: Introduces some environmental issues and concerns.

2. Letting Responses Arise

Two activities that encourage participants to share their thoughts and feelings about the condition of the world and their own life journey and events.

3. Individuals Making a Difference

Two activities designed to develop participants' appreciation that individuals have the power to shape events, both on a personal level and a global one.

4. Identifying Goals and Resources

Participants work in pairs to respond to questions designed to highlight what the individual requires for change to occur. This is followed by a mini-lecture/discussion on the notion of interconnectedness between people and people and between people and our planet. The third activity asks participants to consider the situations they have experienced in school/the classroom.

5. Debriefing

A. Debriefing Activity: Participants work in pairs and discuss what they have valued from the workshop.

B. Final Evaluation: Participants choose a word or short phrase to sum up their feelings about the workshop.

MATERIALS REQUIRED

It is preferable that the space should enable participants to sit in a circle and be able to move about easily.

A) Provided

Overhead Transparency Masters

OHT 1: Person-People-Planet

OHT 2: Questions for Debriefing

Resources

Resource 1: Envirobingo

Resource 2: The Global School

B) To Obtain

Activity 1C: Facilitators should obtain a tape of a contemporary song, performed by a local group if possible, which is about environmental and global issues.

Activity 2 A/B: A3 sheets, coloured pens, pencils.

ADDITIONAL READING

Greig, S. *et al.* (1989) *Greenprints for Changing Schools*, WWF/Kogan Page, London.

Hicks, D. (ed.) (1988) *Education for Peace - Issues, Principles and Practice in the Classroom*, Routledge, London.

Hicks, D. (ed.) (1995) *Preparing for the Future: Notes and Queries for Concerned Educators*, Adamantine Press, London.

Macy, J.R. (1983) *Despair and Personal Power in the Nuclear Age*, New Society Publishers, Philadelphia.

Peavey, F. (1986) *Heart Politics*, New Society Publishers, Philadelphia.

Pike, G. and Selby, D. (1988) *Global Teacher, Global Learner*, Hodder and Stoughton, London.

Roszak, T. (1981) *Person/Planet*, Paladin, New York.

Seed, J. *et al.* (1988) *Thinking Like a Mountain - Towards a Council of All Beings*, New Society Publishers, Philadelphia.

Shields, K. (1991) *In the Tiger's Mouth - An Empowerment Guide for Social Action*, Millenium Books, Newtown.

N.B. The Role of the Facilitator: It is important to create an atmosphere of acceptance, safety, trust and mutual support, especially when dealing with the strong feelings which may be expressed in this workshop.

Attention needs to be constantly given to both the content of the session and to the process being experienced. Because this can be quite demanding it is often valuable to work with another facilitator.

Facilitators must be clear about their own feelings and responses to issues, and at appropriate times be prepared to share these. Preferably this work should be done prior to working with a group so that the facilitator can concentrate on what is happening in the group.

Tensions and conflicts may arise in the group, and it is important that there is some group commitment to working through these. Similarly, it is necessary to avoid endless arguments and to prevent members from putting each other down.

Workshop leaders who are unfamiliar with this approach may wish to do some background reading. In particular, Chapters 1 and 2 of Macy and Chapters 1 and 14 of Shields. (Listed in Additional Readings above).

In the activities which follow, some choice is provided to enable facilitators to select those with which they and the particular group may feel comfortable.

1. Introduction

A. Initial Activity

- If it is the first meeting of the group, use a name game, e.g. each person says their name and indicates one of their strengths.

  Or, alternatively, if members of the group already know each other a little, use the game 'Envirobingo' (Resource 1) as a warm-up activity.

B. Overview

- Briefly outline these to the group, indicating some of the underlying assumptions described in the notes to the facilitator and in the introduction.
- Point out that the workshop:
  - is planned as a personal as well as a group experience;
  - involves sharing personal ideas, experiences, feelings, fears and hopes with others;
  - may lead to strong feelings being expressed by people in the group; and
  - allows participants the unconditional right to abstain from any activity, at any time.

C. Song: Focusing Activity

If a suitable song has been obtained, listen to it without comment.

2. Letting Responses Arise

Depending on time available, use either Activity A (Imaging with Colours) and/or Activity B (Life Trajectory) to encourage participants to begin to share their thoughts and feelings openly.

A. Imaging with Colours

- Ask the group to suggest words or phrases denoting conditions in the world that cause them distress and write these up on large sheets of paper.
- In silence, individuals consider the words and phrases and find one that speaks to them with particular impact, then each works alone with A3 sheets and coloured pens to portray their response.
- Ask the participants to divide into groups of 3-4 and to name any particular feelings they had as they worked on this task. There is no need to defend or explain their responses.

B. Life Trajectory

- Encourage relaxation and indicate that the activity is about looking back over the course of one's life in the context of world events.
- Use pencil and A3 paper. Draw a line to represent one's life journey from birth to the present, recording the major social and personal events that have shaped it.
- Turn the paper over and continue the line from the present to the moment until their death, noting the anticipated date of death and the major events expected to happen in the future.
- In groups of 3-4 discuss the feelings evoked by each aspect of the activity, particularly any conflicting feelings about the future.

3. Individuals Making a Difference

These two activities help participants to appreciate the power of individuals in shaping events, large and small.

A. Recalling Action

- Ask participants to settle in a comfortable position.
- Ask them to relax, close their eyes and remember a time when they felt that some action they took made a difference that was positive. Pose the following, or similar, questions:
  - What happened?
  - Who was involved?
  - What was the setting?
  - Remember as vividly as possible the qualities of mind and feelings you had at the time.
- Ask participants to make a few notes, then tell their story to another person.

B. Brainstorming

- Divide participants into small groups to brainstorm responses to the following two questions:
  - In our daily lives what causes us to avoid expressing our deepest concerns and feelings about the dangers facing our world?
  - In what ways can we help others honour the deep concerns and feelings they may have about the dangers facing our world?

4. Identifying Goals and Resources

A. Personal Goals and Resources

- Participants work in pairs, taking turns to respond to the following questions from the facilitator; one speaks, the other records.
- Facilitators should allow 2-3 minutes for the first couple of questions and gradually decrease the time as participants get used to the activity.
  - If you were totally fearless and in the possession of all your powers what would you do to heal our world?
  - What strengths or resources do you now have, that would help you do that?
  - What will you need to learn or acquire?
  - What obstacles are you likely to put in the way of fulfilling this goal?
  - What can you do in the next week - no matter how small the step - that will help you reach that goal?
- The facilitator repeats the questions at this point - one by one - and the scribes read back their answers quietly.
- Participants change roles and the process is repeated.
- The written answers are then given to their owners.
- In their pairs, invite participants to indicate what support they may have, or may need, in taking the step they have suggested.

B. Person-People-Planet: A Mini-lecture/Discussion

The aim of this segment is to facilitate reflection on the interconnectedness of life, our relationship with other people (both those close to us and known to us, as well as those further away and unknown) and with our planetary environment.

- Use OHT 1 of three overlapping circles representing Person-People-Planet.
- Use the diagram to help reflect on the interconnections of our lives. Consider the things we do individually and collectively, and the impact they have on individuals, other groups of people and the planetary environment or our immediate part of it.
- Consider human rights/respect for individuals/cultures. What impact on individuals results from the actions of some groups? How is human behaviour affected by the nature of the planet?
- How have we acted in the past? What impact have our actions had on other people and on the planet?
- How should we act in the future? How can the balance and well-being of all people and the sustainability of the planet be achieved?
- Is this model potentially useful as a framework for reflecting on past behaviour? How could it be used in clarifying impacts of decisions we make?

C. Goals for Schools and Classrooms

- Distribute Resource 2 and ask participants to read the paragraph at the start of that page.
- Ask participants to work in groups of 4-5 to consider the following questions on Resource 2.

- In what ways has a school or classroom you experienced been empowering?
- What would you change or do differently in your classroom or school? How?
- What knowledge or skills might you need to learn in order to make the changes you have envisaged?
- Suggest some ways in which you might acquire the knowledge and skills you have identified as necessary.

5. Debriefing

A. Debriefing

Participants choose a partner and briefly answer the following questions (on OHT 2):

- Which aspect of this workshop have you found the most stimulating?
- Name one new thought you are taking away from it.
- What is one thing you intend to do as a result of the workshop?

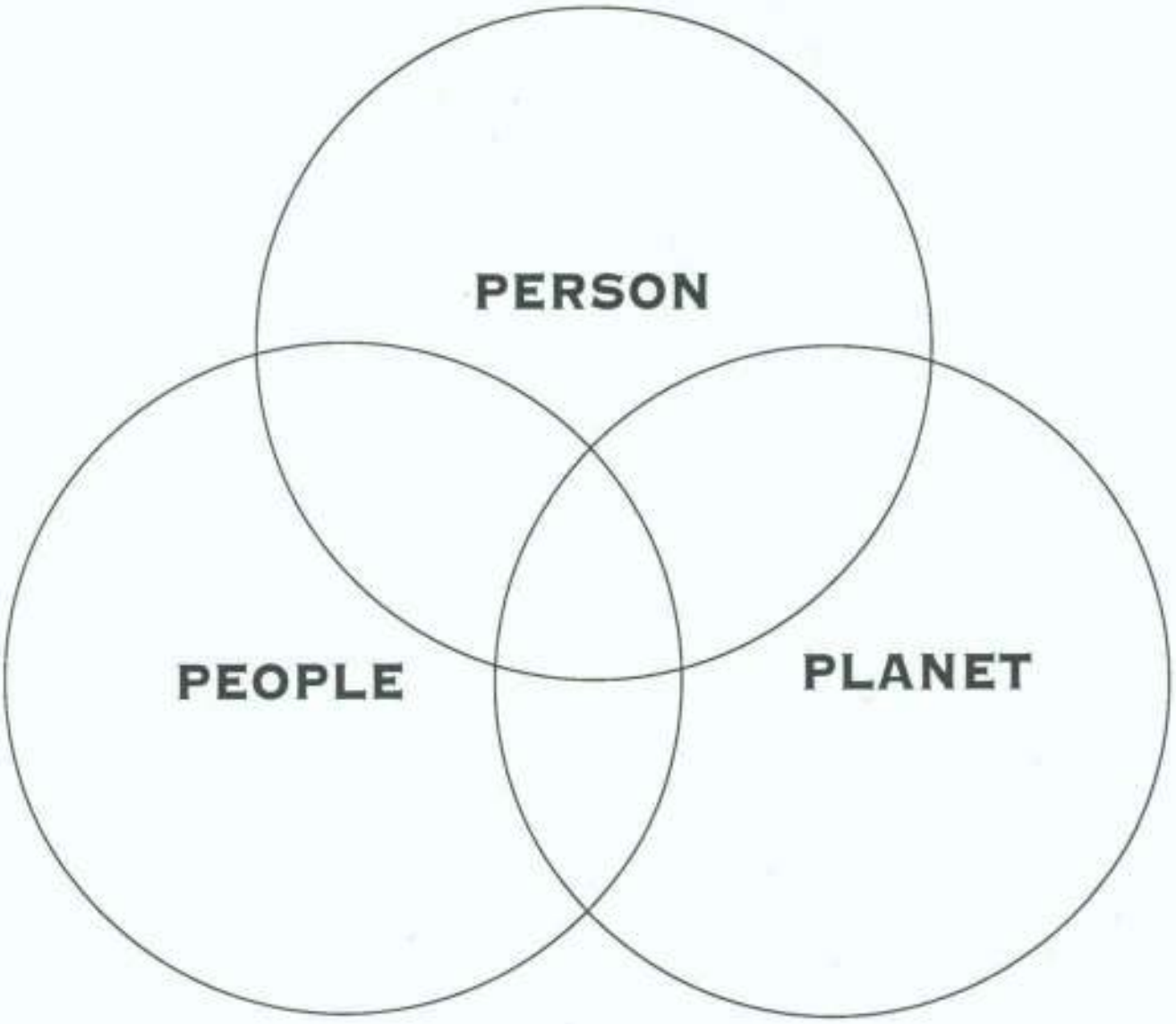
B. Final Evaluation Activity

Ask participants to choose a word or short phrase to sum up their feelings about the workshop. This can be done as a round. The facilitator accepts the comments and affirms the participants without any reactions or discussion.

OHT'S

OHT 1

PERSON - PEOPLE - PLANET



OHT 2

QUESTIONS FOR DEBRIEFING

Choose a partner and briefly answer the following questions:

1. Which aspect of this workshop have you found the most stimulating?

2. Name one new thought you are taking away from it.

3. What is one thing you intend to do as a result of the workshop?

RESOURCE 1

ENVIROBINGO

Complete a row of four squares (horizontally, vertically or diagonally) in the table below by writing in the name of someone who .....

A. Rides a bicycle regularly	B. Is a vegetarian	C Is a member of a community organisation	D. Grows some of their own food
E. Has walked in a rainforest	F. Is a reformed smoker	G. Reused or recycled something recently	H. Has cooked a meal for their family or friends
I. Can speak another language	J. Conserves water in some way	K. Can name a local group which sings about environmental issues	L. Has fasted for a day
M. Has a family member living in another country	N. Tries to eat locally-produced rather than imported food	O. Has planted a tree in the last year	P. Can name a United Nations agency

RESOURCE 2

THE GLOBAL SCHOOL

In the global school, as in the global classroom, the medium is the message. The development of cooperative, affirmative attitudes among students is largely dependent upon teachers displaying those same attitudes, in the staffroom as well as the classroom. A respect for the intrinsic worth and rights of other people must be enshrined in school regulations, disciplinary and complaints procedures. The encouragement of students to actively participate in their own learning and development needs to be supported through opportunities to share responsibility for the management and direction of the school. A belief in open communication is effectively supported through meaningful dialogue between parents and teachers. A commitment to experiential learning can be positively expressed through sending students out into the local community, to learn from its expertise and to contribute to its growth. In short, the empowering school is an embodiment of the ideals and aspirations it has for its students.

Pike, G. and Selby, D. (1988) *Global Teacher, Global Learner*, Hodder and Stoughton, London, p. 60.

QUESTIONS

1. In what ways has a school or classroom you have experienced been empowering?

2. What would you change or do differently in your classroom or school? How?

3. What knowledge or skills might you need to learn in order to make the changes you have envisaged?

4. Suggest some ways in which you might acquire the knowledge and skills you have identified as necessary.