



"the environmental conscience of the United Nations"

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1975 annual review

United Nations Environment Programme



1975 Annual Review by the Executive Director

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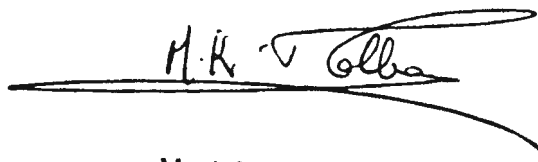
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Preface by the Executive Director

The historic Stockholm Declaration on the Human Environment, endorsed by the Governments of the world at the United Nations Conference on the Human Environment, focused the growing concern of enlightened people everywhere that the resources of our Only One Earth were finite and threatened. It expressed the need for a common outlook and for common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment.

A major reflection of this concern was the recommendation to establish a United Nations Environment Programme to provide leadership in co-operation and co-ordination amongst Governments and international agencies in environmental protection and improvement.

It is now more than four years since the Stockholm Conference. This first Annual Review indicates how far UNEP has come in translating the expectation of Stockholm into reality, the direction we are taking and the methods we seek to achieve our goals. As one delegate to the third session of the Governing Council stated "UNEP has become the environmental conscience of the United Nations system and its environmental advocate to the world".

A handwritten signature in dark ink, appearing to read 'M.K. Tolba', is written over a horizontal line. The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Mostafa K. Tolba, Executive Director

Introduction

This is the first annual review of the United Nations Environment Programme. It aims to present under one cover, and in readable form, an account of some of the work undertaken by UNEP. In future, such reviews will concentrate on describing developments in the previous year, but in this first edition more emphasis is put on introducing UNEP to the reader.

Both the Stockholm Conference, in elaborating the concept of UNEP, and the General Assembly, in its resolution which established the body, recognized that environmental problems at the international level required a special approach. Since these problems arise in many fields of human endeavour and since, therefore, they are the concern of many organizations in the United Nations family, it would have been wrong to parcel up the environment as a self-contained entity and make it the exclusive responsibility of a new sectoral agency. Thus the concept which shaped UNEP was entirely different from those which shaped bodies such as the World Health Organization (WHO) or the Food and Agriculture Organization of the United Nations (FAO). UNEP was created as a small co-ordinating body, designed not to take over the responsibility of others, but to give leadership and direction to environmental initiatives at the international level — not to do the work itself, but to make sure that it gets done.

There was no precedent in the United Nations system for a body with such responsibilities. The establishment of UNEP was a pioneering venture. It is therefore not surprising that it has been accompanied by difficulties and frustrations on the one hand, and by challenge, excitement and a sense of reward on the other.

The state of the environment¹

Introduction

By resolution 2997 (XXVII) of 15 December 1972, the General Assembly decided that the Governing Council of the United Nations Environment Programme should "keep under review the world environmental situation in order to ensure that emerging environmental problems of wide international significance receive appropriate and adequate consideration by Governments". To assist the Governing Council in this task, the Executive Director prepares a report each year on the state of the environment. This is the third such report in the series. The two previous documents discussed environmental factors (such as climatic change, the condition of the biosphere and the effects of toxic substances), human needs (including food, energy and raw materials) and social factors (including population growth, stress and social tension). The present report places emphasis on human needs and values. Chief among those human needs is the elimination of poverty which affects the majority of mankind, through modes of development which protect and enhance man's environment.

The report does not suggest solutions: it is designed to stimulate discussion from which solutions may emerge.

Review of the state of environmental problems

The environment — defined as that whole outer physical and biological system in which man and other organisms live — is a total entity. The wise management of environment depends upon an understanding of rocks, minerals and waters, of soils and their present and potential vegetation, of animal life and potential for livestock husbandry, and of climate. This management demands positive and realistic planning that balances human needs against the potential the environment has for meeting them. Good management reduces pollution, erosion, and the wastage of resources by irreversible damage. To prevent such types of environmental degradation is certainly more efficient than to redress them after they have occurred.

Man and environment

1. The approach. Like every other living being, man has specific biological needs. However advanced his civilization, he remains totally dependent on other forms of life for food, for the replenishment of the oxygen he breathes from the air and for the recycling of essential elements. But man's desires go far beyond his basic needs and make his requirements more complex and subtle than those of any other organism, just as his power to change the world

greatly transcends theirs. How can this power be used to create development that will improve the conditions of life for the majority of the world's peoples and ensure that their environment is productive, healthy and pleasant to live in?

Both the creation and recognition of environmental problems depend closely on the way society is organized, and on its values and objectives. Changes in the relationship between man and his physical environment depend to a large degree on changes in the organization and aims of society. If man is to escape from a situation in which much energy and resources are devoted to correcting past mistakes, his aim must be to build a society which is intrinsically compatible with his environment.

2. Basic human needs. Our perception of human needs varies according to our culture, time and technological progress. Some needs are "basic" because dignified and active human life is impossible unless they are sufficiently satisfied. These needs include food, shelter, health, clothing, education and creative productive work and they are felt deeply by every human being. In addition, there is another group of "social" or "cultural" goals such as entertainment, artistic and musical expression, participation in social affairs, travel, choice of employment, etc. Once basic human needs are satisfied — a most difficult task — people will still have wants which relate to individual standards and also strongly reflect cultural influences.

Aspirations and expectations mount as societies develop and economic growth proceeds, but they are never fully attained. Man is always searching for new goals — of knowledge, art, social choice, or physical quality of life.

3. The limits of the environment. Today's greatest challenge is to design development so that it satisfies basic needs — beginning with the eradication of poverty — but one that is environmentally realistic and does not transgress the "outer limits" imposed by the capacities of the biosphere.

It is easy to see that the earth is of finite size, receives a finite amount of radiation from the sun, has a finite potential plant productivity, and in consequence can only meet the basic needs of a finite number of people. But we do not know what the "carrying capacity" of the earth is, or which factors are most likely to constrain the processes of social development. Thus outer limits cannot yet be defined accurately.

One thing is evident. The world is not environmentally uniform; nations differ in their environmental resources. Some may always have to struggle against poor soils, unpredictable climates, or extremes of heat and cold, just

as others lack indigenous energy resources or access to sea fisheries. No single solution will work everywhere, and development to meet basic needs and social aspirations will be much easier in some countries than in others. Some may never be fully self-sufficient in food, just as others see no way of becoming self-sufficient in energy or raw materials. Development will demand interdependence.

Different parts of the biosphere differ in their "resilience", that is their resistance to changes in the nature and intensity of human impact. It used to be thought that diverse and dominant systems like tropical forests were also relatively stable, while species-poor systems (evidently under the continuing stress of a harsh environment), like the deserts, were fragile. New research suggests that the relationship between diversity and stability is far less simple. In tropical forests, a high proportion of the essential nutrients in the system is commonly present within the trees, and if cutting and burning disperses these nutrients and at the same time bares the soil to erosion, much of the fertility in the system may be rapidly lost. On the other hand, the temperate zones of the world, with their more equable climate, have large areas where, despite millenia of continuous agricultural use, the robust soils remain fertile. These differences in the capacities of different systems to sustain their biological productivity when manipulated by man may set local outer limits to land development in various regions — or at least indicate which methods of development are most appropriate.

The concept of "outer limits" is sometimes also applied to pollution; in this context, an "outer limit" is the maximum amount of a particular substance man can discharge to air, land, freshwaters or oceans before unacceptable change takes place. How atmospheric pollution may cause climatic change and an increased hazard from ultraviolet radiation, which in turn will place constraints on development and the satisfaction of basic human needs, is discussed below.

But behind such a debate lies a basic question: the environment has an undoubted capacity for dispersing the waste products of human societies which have used this capacity throughout history, but how legitimate is it to use that capacity when it is not possible to forecast all the effects of these emissions?

Not enough is known about the functioning of the world's environment and biological systems to permit accurate predictions about these various constraints. More research is needed, especially on how to generalize from the existing detailed knowledge of many local situations, to provide valid models of our diverse world. This is one of the chief aims of the United Nations Educational, Scientific and Cultural Organization's (UNESCO) Programme on Man and the Biosphere (MAB).

4. Social constraints. The environmental inequalities in the world are paralleled by economic ones, which are a major obstacle to the satisfaction of basic human needs, especially in the developing countries — and a barrier to the harmonious development of mankind. Income inequality in developing countries distorts the production structure, which copies the systems found in the advanced countries, and concentrates on meeting the demands of urban

minorities whose income levels and consumption patterns are on a par with those of the middle and upper social sectors in developed countries. Scarce capital and technological capacities are diverted from meeting the basic needs of the bulk of the population who live in poverty. Underemployment, reflecting inadequate use of the human resources and capacities of those countries, is one of the direct consequences. Unemployment aggravates poverty and the deterioration of the human environment². Population growth under these conditions of low production and inadequate accumulation of wealth makes the situation worse.



Man and his (pollution free) environment

Relief of the poverty affecting so large a part of mankind is hampered by the present concentration of the world's economic strength in the developed countries, and by the considerable waste of resources there. On the other hand, the world's strength in unexploited natural resources is located in the developing countries — which lack the other necessary resources, including technology, to develop them fully for the benefit of their people. The Declaration on the Establishment of a New International Economic Order adopted by the United Nations General Assembly at its sixth special session (resolution 3201(S-VI) of 1 May 1974) aims at correcting this situation.

Another area of grave concern is the arms race, which continues despite efforts made in the United Nations and other international forums; among the developing countries, this race is even accelerating. The nuclear stockpiles of the major powers in 1974 amounted to some 30,000 megatons³, two million times the destructive capacity of the Hiroshima bomb. The group of powers with nuclear weapons has increased. In addition, about 20 countries which have not done so are in a position to make such weapons, using the plutonium produced by reactors installed to generate electricity.

The "conventional" arms race is no less flourishing. The military expenditure of the developing countries taken as a whole has grown at an annual rate of ten per cent since 1960⁴. A large part of the scarce foreign exchange obtained through international trade has been used to increase military capacity, rather than to develop the environment or relieve the poverty of the population. The major powers actively encourage this arms race, competing with one another to sell weapons. No less disturbing is the increase in the capacity of modern weapons to destroy both human life and the environment which sustains it. Recent wars have shown the scale on which crops and forests can be destroyed. There is now also the possibility of modifying environmental factors, such as weather and climate, for hostile purposes.

Problems

1. *Hunger.* According to World Bank estimates, in 1975 there were some 750 million people living in absolute or relative poverty (defined respectively by an income *per capita* of below \$50 a year and below one third of the average *per capita* income in the nation to which they belong). A recent United Nations survey indicates that half the people in the world suffer from hunger or malnutrition or both⁵. Some estimates suggest that to feed the present population of the world adequately, global food production should be doubled. In the meantime, since 1961, world food reserves have fallen from a supply sufficient for 95 days to only enough for about a month⁶.

Population experts report that at present there are 4 births and 2 deaths every second. The 3.7 billion people in the world in 1972 had increased to 4 billion by 1975 and are expected to exceed 7 billion by 2000⁷. Present food production needs to be multiplied by four if the basic needs of all these people for food are to be met. A vigorous programme aimed at achievement of basic human needs in all countries *may* enable world population to stabilize much earlier than now expected, since birth rates tend to fall with increasing well-being.

However, the zones of the earth that are naturally fertile, with robust soils and equable climates, are already very largely occupied. There are only limited new lands to cultivate, and at present the gains from this source are balanced, and may even be exceeded, by the loss of farmland through erosion, aridity, salinity and urban encroachment⁸. It may still be possible to achieve reasonable increases in world fishery catches⁹, by exploiting new waters and species, but on land the additional food production needed must come largely through more efficient use of the areas already under cultivation, and by checking degeneration into desert.

Spectacular "breakthroughs" are rare in science and startling advances cannot be expected, but a great deal of research is going on. Only about five per cent of the energy reaching the Earth in the form of sunlight is absorbed by vegetation, and the process of production of edible food by plants, and its conversion to animal protein, is not very efficient. New strains or species better adapted to "fringe" habitats than existing domesticated plants and animals and changes in dietary habits to eliminate much of the

wastefulness in the developed countries today, may help. Enhanced production will certainly demand the extended but careful use of irrigation, fertilizers and pesticides. New types of nitrogen fertilizers are being developed which release their nitrogen into the soil as nitrates during the growing season at a rate comparable to the crop's demand. Biological means of enhancing soil fertility, for example by inoculating the ground the nitrogen-fixing bacteria, may be developed. Integrated pest management, blending ecological habitat, biological and selective chemical agents of control, is being explored. Improved forecasts of weather and climate would be of immense benefit for agricultural operations and planning. The efforts to determine and attain the theoretical limits of such forecasts being made under the Global Atmospheric Research Programme and the World Weather Watch should be intensified. Mathematical models that improve the accuracy of crop yield forecasting, taking account of weather and climate, are also needed.

With all these developments, there are grounds for optimism about the prospects of feeding the foreseen world population — at a better standard than prevails in many places today. But there is need for caution. Modern intensive agriculture costs energy — fossil fuel energy employed in making implements, fertilizers and pesticides. The fertilizers and pesticides employed can have unwelcome side-effects. The distribution of the products to those that need them is costly, and in recent years these distribution costs have been rising twice as fast as production. The technology for improving agriculture may exist, but its actual effectiveness depends on the training of farmers, especially in the developing countries. Something must be done about the high wastage of food in transport and storage. In Africa, the annual losses in storage are equivalent to the food requirements of 250 million people. In the United States, the losses cost \$100 million per annum.

2. *Pollution and world climate.* The climate of the earth depends on a complex system of interactions, and a relatively small change in one of the controlling factors could conceivably produce climatic changes which would have serious consequences for mankind, hampering the increase in world food production that is so vital to the fight against poverty. During recent decades, there has been much discussion of the possible effect on climate of the rising carbon dioxide content of the atmosphere, caused by the burning of fossil fuels, and of changes in atmospheric turbidity caused both by natural events, such as volcanic eruptions, and by human activities. More recently, concern has also been expressed about the possibility of a reduction in the amount of ozone in the stratosphere.

A recent report by the World Meteorological Organization¹⁰, prepared in collaboration with UNEP and the International Council of Scientific Unions, concludes that supersonic civil aircraft, of the type and in the numbers now planned, are unlikely to cause a significant reduction in ozone levels. On the other hand, a continued release of chlorofluoromethanes (widely used as a propellant for sprays and refrigerants) could have an appreciable effect. There have also been recent suggestions that both the

present processes for the manufacture of nitrogenous fertilizers and the behaviour of those fertilizers in use could increase the amounts of nitrous oxide entering the atmosphere, with additional effects on ozone levels. This ozone acts as a screen against ultraviolet radiation from the sun, which can cause skin cancers in man, and other biological effects. An increased penetration of the atmosphere by this radiation could also have effects on climate.

The fight against poverty depends on increased food production and the increased generation of energy (the environmental effects of energy generation are the subject of document UNEP/GC/61/Add.1). At present most of mankind's energy needs are met by burning wood or fossil fuel. If this burning is to be done on a greater scale, what are the possible consequences for world climate and biological productivity, both through the general influence of the carbon dioxide and particulates released and the more local impact of waste heat? If nuclear energy is to replace fossil fuel energy sources, again the environmental consequences need to be thoroughly evaluated in advance. If the present system for making or using essential fertilizers is likewise capable of damaging side-effects, it is important that these be appraised now. To double world food production may require more than a doubling of fertilizer and pesticide production. Environmental systems are very complex, and there is not enough evidence to indicate with certainty that the problems described above are real ones. To understand this problem more work involving several United Nations agencies and other international organizations is urgently required.

3. Pollution and people. Pollution that affects the climate also affects people everywhere. Most pollution problems, however, remain localized, and their seriousness depends very much on the way of life of the people affected. In developing countries undernourishment, malnutrition and infectious diseases associated with poor environmental sanitation, contaminated water supplies, and inadequate control of disease vectors, separately or in combinations, still cause great suffering and waste of life. Efforts here have rightly been devoted to improving basic environmental health. As development proceeds, new environmental health problems related to urbanization, industrialization and the ways of life that go with them assume increased importance.

According to United Nations estimates¹¹, 3,103 million out of the 7,253 million people expected in the world in 2000 will live in towns and cities. Of this urban population, 1,996 million (64.3 per cent) will live in developing countries. In 1950, there were only 70 cities with a million or more inhabitants in the world; today there are about 84 in the industrialized countries and 74 in the third world. By 2000, it is estimated that there will be 276 such cities in the third world alone¹².

Cities grow in two ways: through the increase in their indigenous population and through migration from rural areas where land is fully occupied and there are insufficient non-agricultural jobs. It is estimated that natural increase of urban population accounts for about one third of the total increase; the rest is through immigration from

the countryside. Opportunities for the poor are generally better in urban than in rural areas¹³, but nonetheless there are many cities in the world where large numbers of people endure poverty, over-crowding and the pollution that these cause. If urban development is going to accelerate over the coming decade, more attention must be given to planning so that these bad conditions are not extended.

As development proceeds, the variety of chemical and physical hazards to which people are exposed increases rapidly¹⁴. Industrial exposure to toxic materials and, more generally, exposure to food additives and contaminants emerge as considerable potential problems. It is possible



Industrial fumes engulf West Germany's Ruhr

that a substantial proportion of the cancers prevalent in developed countries results from low level exposure to such substances over long periods.

Another growing problem of urban and industrial areas is *noise*. Although more information is needed about its effect, noise clearly makes a major contribution to the psychological tension which people who live in such environments suffer. Urbanization also demands increasing amounts of energy, and can cause social disruption and stress if this urban growth is not very carefully planned.

All these issues are of pressing importance, for the actions taken in the next decade will determine the quality of the urban environment that 40 per cent of the world's population may be inhabiting at the end of this century. A considerable scientific effort, especially in the World Health Organization, is needed in order to ensure that development plans are designed to provide the best attainable environmental health. More attention must be given to positive strategies that create urban centres of the "right" size. In many developing countries there are not enough resources to provide jobs, education and health services throughout the rural zone, but it may be possible to provide

them in townships of intermediate size in such regions, thus stemming the drift to the great cities. If services and employment are distributed in a way that takes account of environmental circumstances, people will go to places where their basic needs can be met and their energies most effectively harnessed.

Towards the better management of the environment

1. Analysis of the problem. Because of the "oneness" of the environment, even the most local environmental problems must be seen in global terms and from the point of view of their long-term consequences. However, the world is heterogeneous, both in its natural environmental features and in the pattern of human social development, and it follows that very few environmental problems can have global solutions. Even those that have — like the possible impact of pollution on climate or on the ecology of the oceans — while they need to be recognized internationally, can only be solved by action at the national or local level. In the end, solutions come from individual people doing something different and effective.

The satisfaction of man's basic needs, and the development of communities that go further to satisfy social aspirations, will demand a growing amount of energy and natural resources. The volume of this demand will depend not only on population growth but also on the style of development adopted. Even today, if waste were eliminated and economic strength distributed more evenly, poverty in the world could be greatly reduced. On the other hand, the uncritical adoption of inappropriate styles of development can add to the waste of resources. The present way of life and consumption patterns of the developed countries are *not* sustainable, and accordingly are not the best for other States, even if they could be afforded. It is certainly worth avoiding the pollution and stress that such countries have experienced. A major effort is needed to study new technologies and new development strategies for both developed and developing countries.

The first need is to assess the present state of the environment in each area and evaluate the alternative patterns of development that could be followed, what each would cost in terms of money and human effort, and how far each alternative would provide benefit. Methods of environmental survey and evaluation, leading to predictive models, are a concern of the MAB programme, of the Food and Agriculture Organization, and of other international organizations. Part of this work may lead to the development of simple, comparable and widely useful indices or indicators.

But because the world is heterogeneous, a degree of specialization in the products of each country is inevitable, and has been a driving force of world trade and economic growth from early history. Few nations are likely ever to be wholly self-sufficient. For most countries, there will need to be a degree of sharing, either through regional international associations or through wider trading links. Economic models are useful in working out the best patterns to follow, but for such models to be implemented world tensions will need to relax. Nations will need to

appreciate that the world is their common environment; trans-frontier pollution and unilateral over-exploitation and manipulation of shared resources must be avoided, even if such action would help meet a short-term economic interest.

Natural environmental systems are not perfect, and human organizations cannot expect to be either, but if mankind is to succeed in the fight against poverty, needless waste resulting from international jealousies *cannot* be afforded. Environmental science can state what can and cannot be done, and predict the outcome of alternative human actions. Only *political will* can ensure that foolish actions are avoided. This can be achieved if the international community gives adequate attention to environment at discussions like those pertaining to the implementation of the New International Economic Order and General Assembly resolution 3362 (S-VII) of 16 September 1975 on development and international economic co-operation.

2. Action at the international level. The air and the oceans are, as many UNEP documents have stressed, the most international of all environmental resources. In the past year action has advanced to develop the Global Environmental Monitoring System (GEMS), needed to inform the Governing Council through UNEP of the scale and trend of global pollution. The WMO programme for measuring background pollution is being expanded, and the participation of developing countries encouraged. Monitoring of oil pollution along shipping lanes is being carried out under the Integrated Global Ocean and Station System pilot project on marine pollution. WHO and WMO are collaborating to co-ordinate air pollution monitoring in a number of cities. FAO is also continuing a major project on the monitoring of world fishery resources. UNEP in co-operation with FAO has already embarked on the first steps towards monitoring of soil degradation and changes in the tropical forest cover.

A step forward was taken with the coming into force of the London Convention on the Prevention of Marine Pollution by the Dumping of Wastes and other Matter, and the development of the Mediterranean Action Plan (referred to in detail in document UNEP/GC/61.chap.IV). The enclosed and shallow seas of the world are under greater pressure from man than the deep ocean, because they receive the pollution discharged from the land and because most fisheries are in the shallower waters where offshore oil exploitation is also concentrated. Regional international agreements to combat the pollution or over-fishing of such seas are clearly desirable, and the action taken in the Baltic, the North East Atlantic (under the Oslo and Paris Conventions) and now in the Mediterranean needs to be followed more widely, especially if the ongoing revision of the law of the sea extends the jurisdiction of coastal States in such waters.

3. Success at the national level

(a) Cleaning the air. In highly-industrialized countries and regions, there are three main sources of air pollution — houses, industry and vehicles. In the United Kingdom, coal smoke from houses used to be the greatest problem but changes in the fuel available, and legislation to compel

people to burn smokeless materials in urban zones, have led to a dramatic reduction in smoky fogs and a 50 per cent increase in winter sunshine in London, Glasgow and similar centres. It has now become worth cleaning the stonework of public buildings, because they stay clean. Public health has also improved, and hospital admissions in London have not been swelled by smog since 1963. In other countries, control of vehicle emissions has been of higher importance: stringent standards in the United States have begun to cure the notorious oxidant smogs of Los Angeles and other cities¹⁵, while controls on vehicles entering central areas of such cities as Siena, Pisa, Florence, Rome, Milan, Munich, Nuremberg and Dusseldorf have not only improved the quality of city life but aided in the conservation of historic buildings. Industrial air pollution has also been increasingly curbed in developed countries, both by better technology, leading to cleaner emissions, and by the construction of tall chimneys to secure better dispersion. Sulphur oxide pollution at ground level in cities in the United Kingdom has fallen by 30 per cent in the past decade¹⁶, but it is worth noting that the "tall chimney" dispersion policy which has provided this benefit is not without problems, for it is possible that it may increase the amount of acidic gas and rainfall affecting vegetation at a distance from the chimney (an international research programme is examining this issue).

(b) *Rivers and lakes.* Waterborne diseases such as cholera, typhoid and enteric fever, which killed many people in Europe in the Nineteenth Century, have now been reduced significantly there because of improved sanitary and water supply conditions. More recently, China has virtually eradicated schistosomiasis, which before 1959 affected about 10 million people. This has been done by chemotherapy and by environmentally sound techniques, including the provision of clean domestic water supplies and the destruction of the snail, which is the host of the disease, through alteration of its habitat¹⁷.

In many countries attention has turned from disease control — obviously the first priority — to improvement of the freshwater environment. In North America, bilateral agreement between the United States and Canada is guiding action to restore the ecological systems of the Great Lakes¹⁸. In the Soviet Union, Lake Baikal, one of the most remarkable freshwater bodies in the world, is being protected by new effluent control policies¹⁹. The Moscow River, like many rivers in Western Europe and North America, is benefiting from new and stringent effluent controls. A convention designed to improve water quality in the shared rivers of Europe has been negotiated in the Council of Europe, and other measures are afoot in the European Economic Community and under the Rhine Commission. In London, because new sewage treatment works have been built, the tidal Thames is no longer deoxygenated in summer, and over 50 species of fish have returned to its waters²⁰.

(c) *Conservation.* The word "conservation" is commonly misused and misunderstood. In its widest sense the word means the wise management of natural resources, so as to sustain their productivity — in whatever form this is sought. Conservation embraces the maintenance of soil fertility,

protection against erosion, the retention of forest cover on hillsides that would wash away were it removed, the protection of the genetic diversity of the world, which provides a pool from which new strains of crops and livestock may be derived, and the protection of samples of natural ecosystems for education and research or human enjoyment. In these terms, conservation is not to be thought of simply as the protection of wilderness for the pleasure of the affluent, but as a policy which is inseparable from the rational use and management of the world environment of all people. Often conservation also includes policies of environmental improvement.



Scientists at work in the Pollution Control Centre, Osaka, Japan

In China there are areas formerly devastated by deforestation and overgrazing and converted into sterile sand dunes. In Liaoning Province and Chang Wu Country, 100,000 out of 150,000 hectares of such wilderness have been restored for afforestation and agriculture. In other parts of the world, FAO is actively encouraging reafforestation of land unwisely cleared in the past, where vegetation cover is essential to retain soils and control water run-off, besides providing wood.

In many areas, land not suited for intensive agricultural use can yet contribute to national well-being under forest or other types of natural vegetation, provide useful plant and animal products, and conserve genetic resources and something of the richness and natural beauty of the earth²¹. In the past year, not only have new national parks on land been established in many countries, but numerous marine areas with rich faunas and floras and high scientific interest have been set aside²². Five such areas have been declared in Iran, 24 identified in the Persian Gulf, and 22 in India, Pakistan, Sri Lanka, Kenya, Somalia and the United Republic of Tanzania. Six areas have been recommended in the Red Sea and the Gulf of Aden, while other areas around Pacific islands have been safeguarded.

(d) *Education and training.* The experience of the "green revolution" in India, for example, showed that new crop strains, new schemes of irrigation and other aids to good husbandry succeed only if they are put in the hands of people who are properly trained and organized to use them. In India, a novel Satellite Instructional Television Experiment (SITE) has recently begun²³. A village provided with a television set and accessories (costing about \$700), even if it has previously been untouched by modern technology, can tune into programmes in its own language, which give local news, entertainment, and instruction on family planning, nutrition, agriculture and education.

Legal and institutional arrangements

Conventions

As a result of recent ratifications by a number of States, six important global conventions came into force in 1975. These were:

- The Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973,
- The Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971,
- The Convention concerning the Protection of the World Cultural and Natural Heritage, 1972,
- The International Convention relating to Intervention on the High Seas in cases of Oil Pollution Casualties, 1969,
- The International Convention on Civil Liability for Oil Pollution Damage, 1969,
- The Convention for the Prevention of Marine Pollution by Dumping of Wastes and other Matter, 1972.

Information regarding the status of other conventions in the field of the environment is contained in document UNEP/GC/61/Add.2.

The Third United Nations Conference on the Law of the Sea has been engaged in a major global legislative activity aimed at a comprehensive regulation of the law of the sea, including the preservation of the marine environment. At the third session of the Conference, held in Geneva in 1975, a single negotiating text was prepared by the Chairmen of the three Committees which included several draft articles relating to the preservation of the marine environment.

At the regional level, a Conference of Plenipotentiaries of the Coastal States of the Mediterranean region was to be convened by UNEP from 2 to 13 February 1976 to conclude, on the basis of draft articles previously prepared by legal and technical experts, three important legal instruments relating to the protection of the Mediterranean Sea. These are:

- Draft framework convention for the protection of the marine environment against pollution in the Mediterranean;
- Draft protocol for the prevention of pollution of the Mediterranean by dumping from ships and aircraft;
- Draft protocol on co-operation in combating pollution of the Mediterranean by oil and other harmful substances in cases of emergency.

Environmental machinery

Most countries have established their own environmental machinery in one form or another. These countries can be

divided into the following two groups:

- Countries with separate environmental agencies²⁴.
- Countries which divide environmental responsibility among various agencies and ministries²⁵.

Some countries could be included in both categories, the lists reflect the type of agency which bears most responsibility or makes the policy decisions. A few of the countries which do have environmental machinery did not reply to the UNEP questionnaire about the existing arrangements in such countries²⁶.

Conclusions

Man cannot be considered in isolation from his environment. Over the world, the needs of people still differ enormously. At one time the environmental problems debated in international organizations would predominantly have been those recognized by the developed countries — the need to control pollution and the desirability of conserving samples of the ecological and genetic richness and the natural beauty of the earth. Since the United Nations Conference on the Human Environment, however, it has been recognized that environmental issues are also of vital concern to developing countries, and that over much of the world the environmental problems are still those associated with poverty — poor housing, bad public health, malnutrition and inadequate employment.

These problems can be solved only through development. But that development, producing more food and drawing on the still great resources of the planet, needs to be environmentally wise, and to be based upon thorough evaluation of the potential uses of the different regions of this highly variable earth. Short-term solutions may all too easily — as they have in many countries — lead to long-term losses which a growing world population cannot afford.

Scientific study can guide development, but it is unlikely to provide a magic formula through which all nations can attain the same standard of living at the same cost in economic or human terms. Because the world is heterogeneous, nations will continue to differ in their ways of life and in the ease with which they can maintain the basic standard of living their people demand. This diversity in the world environment has also added to the richness of human experience by evoking differently adapted ways of life in different places. This diversity is likely to continue to be reflected in the detailed pattern of development.

There are enough environmental success stories to show that much can be done, in countries with very different political and ideological systems, to improve the quality of life. Probably the only pollutants still increasing in the world are those whose hazards to man or other forms of life have not yet been demonstrated. Science, linked to monitoring, is needed to ensure that new pollutants do not create unrecognized hazards. International schemes to screen such substances before they come into widespread use are a welcome recent development. Science can also guide environmental management by defining potentials for land use under different conditions.

International collaboration, on a scale not seen so far in the history of the world, is essential if mankind is to meet

basic human needs and, at the same time, to safeguard the environment for future generations. The recent ratification of a number of important global conventions on matters relating to the environment is an encouraging sign in this respect. Moreover, the increased interest Governments have shown in environmental matters, demonstrated by the establishment of national environmental machinery in many countries, is further evidence of concern for environmentally sound development. This is important because some countries which at present use a disproportionate share of the earth's resources may need to learn to do with less, and use what they consume less wastefully, as part of this process. There is nevertheless still a danger, at both national and international levels, that Governments will use the inadequacies of present knowledge as an excuse for deferring action that can and must be taken now, but which may demand the adjustment of cherished policies.

Without political *will*, science can do nothing. The essence of the environmental challenge, therefore, is political rather than technical.

Summary of the environment programme

Introduction

Environmental problems by their nature defy neat definitions and boundaries, both within and outside the United Nations system, and must therefore be tackled in a manner which does not isolate environment from other activities and considerations. Thus UNEP has been charged with the task of shaping an environmental programme for the United Nations system as a whole, and indeed one to which Governments and other organizations can contribute. UNEP is not an executive agency but a co-ordinator, stimulator and catalyst. It follows that the executors of the extensive programme which UNEP shapes are to be found throughout, and to some extent outside, the United Nations system, and that implementation of most of the programme is not under the direct control of UNEP.

Because of the breadth of the programme, its long-term nature and the many parties involved, to discuss the environment programme in the degree of detail which a full understanding requires would take far more space than is available. For example, the legislative authorities for the programme, if quoted verbatim, would cover many pages. Thus it has been possible to give no more than an abbreviated account of the problems addressed, to list the legislative authorities and to summarize the strategy adopted for the solution of the problems with corresponding outputs; in short, this summary gives an introductory overview. A fuller understanding of how the programme has been arrived at, what it is and how the Environment Fund is used to help execute it, can be obtained from certain documents placed before the first four sessions of the Governing Council and from the Council's decisions thereon.²⁷

These documents also explain at greater length the expected output from the many activities — some of which are supported in part by the Environment Fund — now in hand to implement the strategy as described in this chapter. The output from the strategies will usually be in the form of published advice, demonstration projects, reference and information systems and training courses. Throughout, priority is given to activities which are action-oriented, and designed to assist decision-makers and environmental planners and managers.

The Governing Council documents also explain the impact which the strategy is expected to have on the problems addressed. It is, however, in the nature of most environmental problems that they are not "solved" in the sense that they can be removed entirely. The impact made upon the problems addressed by the environment

programme can therefore only be assessed in relative terms: are the problems less severe than they would otherwise have been? Are they reduced to acceptable levels? Are the knowledge and skills more widely available to cope with environmental problems? Do people understand better the environmental consequences of their actions?

Programme objectives

- Objective 1 Human settlements
- Objective 2 Human and environmental health
- Objective 3 Ecosystems
- Objective 4 Oceans
- Objective 5 Environment and development
- Objective 6 Natural disasters
- Objective 7 Energy
- Objective 8 Earthwatch
- Objective 9 Environmental management
- Objective 10 Supporting activities

Objective 1: Human settlements

To assist Governments and other bodies to promote an enhanced quality of human environment in human settlements, and generally in the human habitat, through better forms of development and management of human settlements and improved technology.

Problems addressed

Accelerating urbanization and migration from rural areas, the rapid expansion of population in those countries which already have serious human settlement problems and the failure of planning and management together account for the deteriorating condition of human settlements, one of the most serious problems confronting mankind. A notable symptom is the rapid spread of marginal or squatter settlements in most large cities of developing countries.

The problems manifest themselves in many ways:

- Inadequate shelter and infrastructure, leading to severe health and social problems,
- Poor delivery of urban services,
- Overburdened transport systems,
- Polluted air and water, and open spaces destroyed,
- Absence of meaningful citizen participation in the decision-making process;
- Poor quality local administration, planning and management.
- Imbalance between town and country, with rural areas suffering from under-development whilst over-

development is the curse of towns.

The resulting environment threatens the physical and psychological health of the people affected. The problems are most acute in the developing countries, but also the condition of some cities in the industrialized countries has deteriorated sharply in many respects in recent years. Thus, human settlement problems are global, fully justifying the calling in June 1976 of the HABITAT: United Nations Conference on Human Settlements Conference, and the establishment of a comprehensive programme for human settlements by UNEP.

Legislative authorities

The most important are:

1. Resolutions of the General Assembly

- Resolution 3001 (XXVII) of 15 December 1972, which decided on the Habitat Conference to be held in 1976
- Resolution 3327 (XXIX), of 16 December 1974 which established the United Nations Habitat and Human Settlements Foundation (see annex VII).

2. Decisions of the Governing Council of UNEP

- Decision 1(I), section III, paragraph 12 (a)
- Decision 8A(II), section 1.1 (a)-(g)
- Decision 29(III), paragraph 9(a).

Strategy and corresponding output

For convenience, this objective is pursued under two headings, the general development of human settlements and human settlements technology.

1. General development of human settlements. The strategy and summarized output are to:

- Develop the concept of human settlements as ecosystems; studies are under way which will first establish in what way human settlements function as ecosystems, and then develop advice on the integration of environmental considerations into human settlements planning,
- Identify constraint choices and opportunities for policies for human settlements: advice will be forthcoming on how considerations of employment, environmental health and natural disasters should influence the planning of human settlements. The relationship between population and human settlements will be explored in demonstration projects,
- Assistance to individual Governments on request: so far principally in the form of advice to the Capital Development Authority, Dodoma, Tanzania,
- Integrated ecological studies of a large urban conglomeration are intended to create a basis for decision-making when long-term plans for human settlements are formulated,
- Training personnel to plan and manage human settlements: regional training programmes are being implemented by UNESCO, and teaching and research institutions are being encouraged to widen curricula to include human settlements training aspects,
- Exchange of information on slum improvements: two demonstration projects are under way in Indonesia and the Philippines and more are planned; these will illustrate an integrated approach to improvement of marginal settlements and slums.

The improvement rather than the destruction or removal

of squatter settlements and slums is not only conserving resources but preserves and improves an environment which in both physical and social terms is valuable to the inhabitants.

In implementing this strategy, UNEP co-operates closely with other parts of the United Nations system, especially the Centre for Housing, Building and Planning of the Department of Economic and Social Affairs. UNHHSF will be involved in some pilot demonstration projects. The Habitat Conference will provide a wealth of material which is intended to be the basis of a permanent information



The new residential section of Islamabad, Pakistan

centre of service on human settlements.

2. Human settlements technology. The strategy is to:

- Develop environmentally appropriate technologies in the area of human settlements with emphasis on self-help methods and resource conservation;
- Support efforts to reduce infrastructure and service costs;
- Assist the development of a systems approach to water supply problems for human settlements,
- Develop appropriate environmentally sound techniques of waste disposal for the health of populations in high density areas,
- Demonstrate the usefulness of local and renewable resources in the construction of dwellings,
- Study the implications of natural disasters on the planning, construction and management of human settlements,
- Development of environmental health criteria for planning of human settlements,
- Establishment of a global network of sub-regional centres in the field of human settlement technology to co-operate on action projects in their sub-region and to exchange information.

More specifically, studies of traffic constraints in Singapore and of a variety of handpumps for rural water

supply are ongoing projects but the strategy is still at the formative stage and the precise form of output is not yet clear. However, considerable emphasis will be placed on pilot schemes and demonstration projects which illustrate the application of environmentally sound technologies to human settlements problems.

Objective 2: Human and environmental health

To promote human health and the health of the environment without creating new hazards to human well-being.

Problems addressed

In developing countries, undernourishment, malnutrition and the infectious diseases associated with poor environmental sanitation, contaminated water supplies and inadequate control of disease vectors, separately or in combinations, still cause great suffering and waste of life. As development proceeds, new environmental health problems related to urbanization, industrialization and the ways of life that go with them assume increased importance. The variety of chemical and physical hazards to which people are exposed increase rapidly. Industrial exposure to toxic materials and, more specifically exposure to air pollution pesticide residues and contaminants of foods are emerging as considerable problems. It is possible that a substantial proportion of the diseases prevalent in the developed world results even from low levels of exposure to such substances over long periods.

The use of chemical methods of controlling pests and diseases has led in many cases to the creation of serious noxious environmental side effects. Present practices must be examined practically on the basis of species diversity and systems stability.

Legislative authorities

The most important are these decisions of the Governing Council of UNEP:

- Decision 1(I), section III, paragraph 12(A) (iii) and (iv)
- Decision 8A(II), section I.1(h) (1)
- Decision 29(III), paragraphs 8 and 9 (c).

Strategy and corresponding output

The priority fields of activity have been defined and a strategy, with expected output, established as follows.

1. *Assessment of occurrence of selected pollutants in all media and their effects on human health and the environment.*

Sulphur oxides have been selected as a model for global assessment. In the first phase of the programme, the distribution of the pollutant will be described with reference to sources, transport, pathways and transformation in the environment. In the second and third phases, a composite picture of the risks created by the pollutant will be established, and then socio-economic factors will be introduced to evaluate the impact of alternative control strategies.

2. *Development of environmental health criteria for man and other living organisms and for ecosystems.*

Upon completion of the first phase of this programme in 1976, a second phase will begin; it will incorporate critical

factors for the assessment of outer limits such as fluorocarbons and ultraviolet radiation. Criteria documents will be prepared for selected radionuclides. Environmental criteria for conserving and protecting living organisms, excluding man, which are fundamentally important to food, agriculture and balanced ecosystems, will be developed.

3. *Establishment of the International Register of Potentially Toxic Chemicals (IRPTC)*

This will involve the establishment of a centre for handling data and answering queries; the development of a network of national, regional and international participants willing to contribute information and data on environmentally significant chemical substances (correspondents in developing countries will be sought to become aware of and make use of the Register); the completion of dossiers on selected priority substances.

4. *Assessment of epidemiological data in correlation with environmental factors.*

The main effort will be devoted to the development of a special epidemiological methodology to assess environmental hazards in developing countries where the adverse effects of industrialization are felt by populations already suffering from heavy bacteriological pollution created by unsanitary living conditions and from malnutrition. A programme for the eradication of parasitic zoonoses will be encouraged, including studies of the environmental and social aspects of the occurrence of these diseases. Jointly, with WHO, environmental intervention in the control of diseases is being studied to develop comprehensive, "environmental" control methods.

5. *Development and application of environmentally sound management systems, initially to control schistosomiasis, malaria and cotton pests.*

As a follow-up to the action plans already developed, demonstration projects will be initiated and evaluated. On the basis of these projects, consideration will be given to the application of the ecological approach in integrated programmes with other proven control methods, in order to show how the dependence on the use of chemicals for the control of these pests can be reduced.

Objective 3: Ecosystems

To establish guidelines for the integrated management of ecosystems to minimize the adverse long-term effects of man's impact and to obtain regular, sustained production within each ecosystem.

Problems addressed

As the earth's population increases beyond four billion and economic expectations rise, more and more of the earth's life-supporting systems become subject to exploitation, regardless of long-term ecological and economic advisability. Ill-advised and badly managed exploitation has led to increasing degradation of ecosystems, reducing many to an unproductive state. The total area of destroyed or degraded soils which were once biologically productive is estimated at 20 million sq km, which is more than the entire arable area used for agricultural purposes at pre-

sent. Some 5 to 7 million hectares of land are lost to agriculture each year through erosion, salinization, settlement building, etc. The destruction of soils by misguided human activity is usually irreversible.

The earth's arid and semi-arid ecosystems are among those most seriously affected by man's exploitation, and in many parts of the world they are losing their capacity to support human populations which depend on them for survival. Man-made deserts account for one sixth of the total area of the world's deserts, which now cover 43 per cent of the earth's land area. Particular attention is given to the desertization process because it is an extreme example of a process threatening the whole world: aridization.

The destruction and degradation of tropical forest ecosystems is accelerating at an alarming rate, and if present trends continue most of the existing forests of the tropics will be destroyed by the end of the century, an environmental and economic loss of great significance, especially to the developing countries in which such forests are now to be found. The earth's mountain ecosystems are particularly susceptible to poor land management practices aggravated by increasing population pressure.

Other ecosystems suffer the impact of man's exploitation through mineral exploitation, exclusive monocultures and the introduction of noxious species.

The destruction and degradation of ecosystems is one of the major causes of the rapid destruction of the world's wildlife. Despite the knowledge that wildlife is a valuable genetic resource and its protection is necessary to maintain the equilibrium of ecosystems, the pace of animal and plant extinctions continues to accelerate, and current conservation efforts are far from sufficient.

Thus, nature's basic resources, such as soils, water, and genes and their inherent diversity, which are fundamental to man's future, are being continually eroded. If man is to have any long-term future he must learn to manage these resources according to the principles of biological systems.

Legislative authorities

The most important are:

1. Resolutions of the General Assembly

- Resolution 3253 (XXIX) of 4 December 1974
- Resolution 3337 (XXIX) of 17 December 1974, which decided to convene a United Nations Conference on Desertification (see annex VIII).

2. Decisions of the Governing Council

- Decision 1(I), section III, paragraphs 12(b) and (f)
- Decision 29 (III), paragraphs 9(d) and (e)
- Decision 31 (III).

Strategy and corresponding output

1. Arid land and grazing land ecosystems. Primary attention will be given to action-oriented programmes focussing on range lands management in arid and semi-arid lands, including revegetation and rehabilitation of degraded lands. Encouragement and support will be given to the EMASAR (Ecological Management of Arid and Semi-arid Rangelands in Africa, Near and Middle East) programme of FAO. Simple numerical models will be developed to

deal with such questions as nomadism *versus* settlement, livestock *versus* wildlife, and agriculture *versus* animal husbandry. Similar activities will be developed in Latin America and South Asia.

Collection, collation and dissemination of existing knowledge, education, training and research will all receive particular attention. Guidelines, manuals, maps and handbooks will be disseminated, often drawing upon the research and field activities conducted through the EMASAR and MAB programmes.

Assistance will be given to the establishment of documentation centres on arid lands, beginning with Latin



A donkey forages for food in an arid zone of Atlantico Province, Colombia

America and the Near East. Research topics include the mechanics of desertification, climatic change, dynamics of vegetation, and the inter-relationship between social structure and resource management practices. Education will be directed at practical ways and means of conserving and developing the productivity of arid and semi-arid ecosystems.

A major element in the strategy is the preparation of a co-ordinated action programme to combat desertification and to prepare for the United Nations Conference on Desertification in 1977, which is being organized by UNEP, and which will decide on the strategies and actions to be taken.

2. Soils. The strategy gives priority to four main elements:

- the quantitative measurement of available soil and qualitative measurement of its productivity.
- understanding the dynamics of soil loss,
- action to prevent further soil loss,
- programmes at the regional and local level to restore soil fertility.

3. Tropical woodland and forest ecosystems. A state of knowledge report has been completed and, with the International Union for Conservation of Nature and Natural

Resources (IUCN), guidelines have been prepared for the development of tropical forest ecosystems in Central and South America and in South East Asia. Guidelines for other regions will be prepared for use by planners and decision makers. Research to fill gaps in knowledge about forest ecosystems in South-East Asia, Latin America and West and Central Africa will be conducted through a number of pilot projects linked to a network of validation sites for testing results. Monitoring of forest cover will be started, one of the expected results being the identification of minimum areas of forest cover that must be conserved to preserve the stability of the biosphere, climate and genetic resources.

Because trees have been drastically reduced in the last 200 years due to a variety of problems — population pressure for more land use by urban centres, clearance of large forest lands for cash crops, high demand throughout the world for timber and large scale tree felling, conversion of forest to tree monoculture or to grasslands for cattle raising, construction of roads and air strips giving easier access to once remote areas, hunting for animals, bird collecting and seed collecting on a commercial scale and fires (slash and burn techniques) — much important adjustment has had to be made. Specifically, UNEP took on many activities to ensure that the effects on the atmosphere of reducing the amount of oxygen and increasing the amount of carbon dioxide due to the loss of trees would be slowed. Some of these activities included:

- Implementation of a project for monitoring forest cover in tropical and sub-tropical areas, to be co-ordinated and supported by the Global Environmental Monitoring System (GEMS).
- Implementation of a programme for the detection and control of forest fires, including the improvement of fire detection systems.
- Integrated pilot projects on tropical forest ecology, including the effects of forest on the atmosphere, on water régimes and on soil-plant-animal relationships.
- Research to identify the minimum viable area of tropical forest ecosystems which should be conserved in different ecological regions.
- Design and implementation of a world survey and monitoring system on tropical rain forests.
- Development and integrated pilot research projects to analyse the structure and functioning of natural forest ecosystems.
- Creation of innovative techniques in tropical silviculture and agriculture; for example, "tropical gardening" to improve soil capabilities, increase production and ensure long-term utilization.

Along with UNEP, other United Nations agencies most involved were FAO, UNESCO, WHO and WMO. Also, the World Wildlife Fund, the International Union for the Conservation of Nature and the International Union of Forestry Research Organization are among the Non-governmental Organizations involved in this most important task of managing and conserving the forest resources of the world.

4. *Other ecosystems.* Activities will focus particularly on the management of mountain and island ecosystems, with

special reference to alternative sources of energy, to new approaches to the exploitation of resources, and to the concept of ecodevelopment which is especially applicable to mountain areas.

5. *Conservation of nature, wildlife and genetic resources.*

With a view to the establishment of a world-wide network of national parks and equivalent reserves, Governments will be assisted in identifying ecosystems for conservation of representative parks of such systems, in evaluating the potential long-term value of these ecosystems for sustained productivity of renewable resources and in exploring how they can benefit surrounding areas. Governments will be encouraged to undertake ecosystem restoration and revitalization schemes to re-establish the potential productivity of water, soil, vegetation and wild animal resources. Regional wildlife surveys and research will be promoted to define the status and trend of species, critical areas of distribution and migration and factors causing the decline of species and habitats. The protection of endangered species will be promoted by encouraging conventions and agreements; particular support will be given to the proposed migratory species convention and to the Convention on International Trade in Endangered Species of Fauna and Flora, which is already in force. Emphasis will also be given to the training of national park and wildlife managers and other conservation experts.

Closely related to these activities will be action to ensure the maintenance of the widest diversity of genetic resources of plants, animals and micro-organisms. Special attention will continue to be given to genetic resources of crop plants, forests and micro-organisms and the applications of the latter to the control of disease, pollution and waste, and as an alternative source of biological fertilizer. The concept of microbiological resources centres in developing countries will be tried on a pilot basis. These will provide the basis for training seminars and workshops, and they will be used to encourage comprehensive programmes of conservation and microbiological resources through surveys, inventories, exploration and collection, documentation, evaluation and utilization.

6. *Water.* Water is considered both as an invaluable resource and as an environmental element which is considerably affected by human activities. The strategy will involve: Support for the United Nations Conference on Water in 1977; the development of ecologically sound waste and waste water disposal systems which encourage recycling and cleansing through biological processes; the inclusion of environmental protection and safety measures in river and lake basin development projects; and the identification and solution of the problems associated with arid land irrigation. Pilot demonstration projects in these areas will be set up. Support will be given to the establishment of water resources management training centres.

Objective 4: Oceans

To safeguard the life-supporting system of the oceans.

Problems addressed

The oceans, covering 71 per cent of the earth's surface, have been used indiscriminately to receive man's wastes.

Their volume is so large that were these wastes to be evenly dispersed throughout, the anthropogenic impact would be barely detectable, but the process of mixing coastal waters with the open oceans is comparatively slow and, in some cases of enclosed seas, such as the Mediterranean, virtually nonexistent. Consequently, pollution problems are most evident in estuaries, coastal areas and enclosed seas — a face which is particularly significant since 90 per cent of the total marine fish catch comes from these areas. Pollutants, including heavy metals (e.g. lead, mercury, cadmium), synthetic chemicals (DDT, polychlorinated biphenyls, petroleum hydrocarbons, radionuclides, and solid wastes have an impact on all marine waters ranging from the actual destruction of living resources and/or their habitat, through rendering them unusable because of the threat to human health, to aesthetic considerations and effects on tourism. Apart from the effects of various types of pollution, there is strong evidence that excessive exploitation results in a depletion of certain resources and affects the balance of certain aspects of marine ecosystems: marine turtles and whales have shown a massive drop in numbers, and some species face extinction; the world *anchoveta* catch decreased from 11 million tons in 1971 to 2 million tons in 1973. The North Sea herring and Atlantic salmon have declined to such an extent that proposals have been made to ban commercial fishing of those species.

The likelihood that the oceans will continue to be the sink for much of man's waste, and the need to exploit to the maximum the living marine resources as a source of food, mean that much more must be learned about the functioning of the marine ecosystem, how much it will tolerate, and the extent to which it can be exploited on a sustained basis.

Legislative authorities

The most important are UNEP Governing Council decisions: 1 (I), paragraph 4 (c), 8 (II), paragraph A.I.4, 25 (III), 32 (III), 33 (III).

Strategy and corresponding output

The main elements of the strategy are: the promotion of international and regional conventions, protocols and guidelines for action aimed at controlling marine pollution and protecting and managing aquatic marine resources; the assessment and monitoring of the state of pollution and of living resources; and support for research, education, training and exchange of information in these topics. Priority within these elements is given to the protection of regional bodies of water.

At the beginning of 1975, an Intergovernmental Meeting on the Protection of the Mediterranean was convened by UNEP in co-operation with the agencies concerned; namely FAO, WHO, IMCO, WMO and others. Advance preparations for that meeting resulted in the preparation of a Draft Action Plan for consideration of the Governments at that meeting. That meeting approved the Action Plan, consisting of the following four components:

1. Integrated planning for development
2. Research and monitoring
3. Legal aspects

4. Institutional arrangements

Implementation of the Action Plan was started immediately after the meeting, and the following is a summary of the action taken in this respect which, at the same time, explains the contents of each of the four components of the Action Plan.

1. Integrated planning for development

The objective of this component of the Action Plan is to ensure that economic development plans are developed and implemented in such a manner as to protect the marine environment in the Mediterranean Sea. The most important activity under this area is the project called the



Fish killed by pollution in Italy's River Tiber

"Blue Plan". This project provides for an examination of social and economic development activities in the Mediterranean region and an assessment of their impact on the marine environment, and a study of the situation as it would look in 20 years' time if present trends remain unchanged, together with possible alternatives if those trends are deemed to be unacceptable. The ultimate objective of the plan is to provide Governments with studies and information about the consequences of the marine environment of various development patterns which would help them take decisions with full knowledge of the consequences. The development of the Blue Plan project is being processed through a series of experts' meetings which will lead to the approval of the project by an Intergovernmental Meeting to be held later.

Action under this component included other activities such as development of plans for the conservation of aquatic living resources, including aquaculture and marine parks, and also activities dealing with tourism and environment and assessment of land-based sources of pollution, etc.

2. Research and monitoring

This component of the Action Plan included the im-

plementation of seven pilot projects in research and monitoring of pollution (metals and hydrocarbons) in water and marine organisms, as well as on water quality and coastal transport of pollution. Significant progress has been achieved during 1975 in implementing this project; a network of some 50 national laboratories made plans to participate in these pilot projects. These projects are being implemented in co-operation with FAO, WHO, WMO and IOC.

3. Legal aspects

The Intergovernmental Meeting which was held at the beginning of the year produced drafts for a framework Convention and two Protocols, one for "the protection of the Mediterranean Sea by Dumping from Ships and Aircraft", and another concerning "co-operation in combating pollution of the Mediterranean Sea by Oil and other Harmful Substances in Cases of Emergency." Immediately after that meeting and throughout 1975 those drafts were developed in accordance with the views expressed during that meeting. By the end of the year, a more definitive text of each of these legal instruments will be agreed upon and ready for submission to a Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region to be held early in 1976. Preparatory work has started on the development of another protocol relating to the control of land-based sources of pollution.

4. Institutional arrangements

Following the recommendation of the Intergovernmental Meeting, UNEP had consultations with all the Governments of the Mediterranean region on the establishment of an Oil-Combating Centre which the Government of Malta had offered to host. These consultations resulted in a plan for setting-up such a centre in Malta and this plan will be ready for submission to the Conference of Plenipotentiaries mentioned above, for approval.

Preparatory work has started, or is planned, in other regions; for example, inter-governmental meetings are planned for the Persian Gulf²⁶, the Malacca Straits, the Red Sea, the Caribbean, and an initial survey mission has been made to the West African coast.

A strategy specifically addressed to the problems of marine living resources has been developed to:

- Promote international and regional conventions leading to the conservation, management and wise utilization of marine living resources and their habitats;
- Promote research for ocean ecosystems as a whole, rather than of a single species, with increased attention to the interactions between terrestrial ecosystems influenced by man and marine ecosystems;
- Encourage the restoration of depleted populations of whales, sirenians, shellfish, marine turtles, etc. through protection agreements, conservation measures and research programmes.
- Encourage Governments to take legislative and other measures to avoid mass-killing of non-target mammals and birds in the course of fishing;
- Encourage Governments to take measures against over-exploitation and destruction of marine ecosystems and their resources, such as algae, tidal estuaries, mangrove swamps and forests, lagoons, sea-grass beds, kelp beds

and coral reefs.

Objective 5: Environment and development

To assist Governments and other bodies to ensure that environmental considerations are fully taken into account in the development process.

Problem addressed

In the past the environmental consequences of the development process were usually ignored, and there was relatively little appreciation of the environmental costs involved. Partly because of this, perhaps, development was often thought to be unavoidably destructive to the environment, and commitment to the protection and improvement of the environment was frequently considered an obstacle to economic growth in developed countries and to the development process in developing countries. In recent years this interpretation of the relationship between environment and development has been largely discredited; indeed, environmental considerations which demand the wise management of the earth's resources are the best guarantee that development can be pursued on a sustainable basis.

But, while there is no basic incompatibility, problems must be overcome if environmental and developmental objectives are to be reconciled. For example: Many forms of development which are pursued today involve an unnecessarily wasteful use of natural resources and are unnecessarily destructive of the environment; Environmental measures — or their absence — can create an adverse socio-economic impact; Sometimes natural products are displaced by synthetics whose production threatens the environment; Much technology currently in use is environmentally unsound or inappropriate; Certain industries create special environmental problems; The location of industries is often environmentally unsatisfactory.

Environment and development relationships are global in character in three ways: development without concern for the environment is shortsighted and to no-one's long term advantage; problems exist in rich and poor countries alike and action taken in one part of the world may have repercussions elsewhere. For these reasons the UNEP programme is particularly concerned with promoting an awareness of environment factors in international debates on development issues.

Legislative authorities

The most important are:

1. *Resolutions of the General Assembly*
 - Resolution 3326 (XXIX), of 16 December 1974, paragraphs 4(a), (b) and (c).
2. *Decisions of the Governing Council of UNEP:*
 - Decision 1 (I), paragraph 12 (d)
 - Decision 8A (II), sections I.3, II.2 and III.3 and 4
 - Decision 21 (III).

Strategy and corresponding output

The strategy has a number of components:

1. *Integrated approach to environment and development.*
The main objectives are: to elaborate environment/development relationships and present a full exposi-

tion of these to the Governing Council at its fifth session; to organize regional seminars with the regional commissions of the United Nations, in order to ensure that environmental considerations play an appropriate part in regional development; to conduct action-oriented case studies on the relationship of environment to development; to develop techniques to ensure inclusion of environmental criteria in development planning; to formulate principles and strategies to meet basic human needs without unacceptable environmental degradation, bearing in mind the complex manner in which environmental considerations are inter-woven with others; to expose the inter-relationships between population, resources, environment and development; to explore how the resources can be raised which are needed for the environmental management of the global commons; and to encourage due attention to environmental factors in international fora and conferences.

2. Ecodevelopment. The application of this concept, which involves harmonizing cultural, economic and ecological factors to ensure the best use of human and natural resources, is to be encouraged through demonstration projects throughout the programme and a progressive clarification of the underlying principles.

3. Socio-economic impact of environmental measures or their absence. The objectives are to individualize types of social and economic consequences of environmental measures or their absence; to develop new methods for evaluating the impact of such measures; to evaluate the trade-offs of environmental measures as against their absence; to identify trade barriers and other restrictions arising from environmental measures; and to evaluate the attitudes and values of people about environment in the context of development.

4. Natural products. The objectives are to examine the process of replacement of certain resources by others; to incorporate environmental considerations into the process by which new products are developed; to investigate the possibility of replacing existing products by new, less environmentally harmful ones; and to develop guidelines for the rational and un wasteful use of natural resources.

5. Technology. What is meant by environmentally-sound technologies has been clarified and the trade-off between environmental soundness and economic appropriateness identified. The next stages involve establishing how environmentally sound and appropriate technologies can be developed and transferred, identifying suitable research and development institutions and initiating pilot projects to test the technologies.

6. Industrial location. The aim is to develop and publicize the principles which should guide the location of industry nationally and internationally, taking environmental limits into account.

7. Environmental problems of specific industries. Through seminars directed to specific industries in turn, the strategy involves obtaining information on the environmental effects of industries and formulating guidelines to assist Governments in assessing and dealing with these effects.

Objectives for dealing with the environmental problems of specific industries affect certain major areas of com-

merce and industry; for example, the pulp and paper, petroleum, automobile, chemicals, iron and steel industries, as well as agriculture, all have a major effect on the environment. These effects must be understood, and guidelines and principles developed for their rational management as part of the effort to protect and enhance the environment and to find harmonious new patterns of development. Two distinct objectives of UNEP are to formulate guidelines for the use of Governments in assessing and controlling the broad environmental effects of certain industries and to develop information on the environmental effects of industries which may be of use in



Experimental windmills at an electric research station in Grantfield, Bedfordshire, England

other parts of the Programme.

In actual fact, industrial seminars were held during 1975 for the pulp and paper industries and the aluminium industry — both sponsored by UNEP. In addition, support was given during 1975 to a seminar in which 180 representatives from the petroleum industry gathered to discuss different aspects of environmental pollution and technology in the petroleum field.

Objective 6: Natural disasters

To prevent or mitigate the disastrous consequences resulting from the occurrence of various natural phenomena.

Problem addressed

Natural phenomena, such as typhoons (hurricanes, cyclones), floods, earthquakes, tsunamis, landslides and volcanic eruptions can obviously wreak havoc, causing much misery and human suffering. Their occurrence may often nullify progress that has been made over a year or more in economic and social development in a country or parts of a country. The particular problem of the impact of

natural disasters and their implications for the planning, construction and management of human settlements is a cause of special concern.

Disasters of relatively slow onset, such as droughts and desertification, or those directly affecting health, such as epidemics, are treated under other objectives of the environment programme.

Legislative authorities

The most important are UNEP Governing Council decisions, 8A(II), section III.2 and, 29(III), paragraph 9(g).

Strategy and corresponding output

Action towards this objective is undertaken in close co-ordination with the Office of the United Nations Disaster Relief Co-ordinator (UNDRO) and is to be oriented towards monitoring, dissemination of warnings and ensuring community preparedness. Initially, action will concentrate on completing a world survey of disaster damage, so as to collect the basic quantitative information necessary for the formulation of appropriate policies for disaster prevention and mitigation at the country level. Secondly, a study of existing knowledge and practices for the mitigation of the harmful effects of particular phenomena will be completed, in order to point up gaps in knowledge and illustrate where existing knowledge could be applied with effect.

A series of manuals to help plan and develop human settlements so that their vulnerability to disasters is reduced to the minimum has been completed by UNDRO with UNEP support and in co-operation with others. Assistance will continue to be given to improve flood forecasting techniques in Central America and to improve cyclone monitoring and warning in the Bay of Bengal.

Objective 7: Energy

To assess the environmental impact of alternative patterns of energy generation and use and to encourage the use of environmentally sound forms of energy.

Problem addressed

Different patterns of energy use and power generation have different environmental consequences; the effects on the environment of changes resulting from the energy crisis require consideration. The major long-term potential environmental hazards from energy development and consumption practices are thermal pollution; possible climatic changes caused by constantly increasing levels of heat fluxes, carbon dioxide and particulates, and sulphur dioxide; and problems of management of radioactive nuclear wastes and the deterioration of safety standards, with increased risk of operational accidents. In addition, environmental problems caused by rapid deforestation in developing countries because of their heavy dependence on wood as the main source of fuel must be considered.

Legislative authority

UNEP Governing Council decision 29(III), paragraph 9(f).

Strategy and corresponding output

A review has been prepared on the impact of energy

production and use on the environment, paying particular attention to the comparative assessment of environmental and health effects; this will be considered by the fourth session of the Governing Council (April 1976) which will provide directives and guidance on further action.

A second element of the strategy is to establish in typical rural areas of Asia, Latin America and Africa demonstration centres harnessing, individually or in combination, locally available renewable sources of energy. Initial steps have been taken to prepare feasibility studies for the establishment of such centres in Senegal and Sri Lanka. The centres will have an integrated facility to harness solar, wind and biogas energy in a centralized location supplying the basic energy needs of a rural community of some 50 to 100 families.

Other activities will include a comparison of energy options on the basis of the environmental impact of various policies and a study on the impact of climate of heat released from energy production and use.

Objective 8: Earthwatch

To develop systems of environmental assessment (Earthwatch), covering evaluation, research, monitoring and information, to provide a basis for environmental management.

Problem addressed

The previous seven objectives describe priority areas of the programme; they need to be supported by work undertaken in pursuit of the last three objectives, the functional tasks of the environment programme. The first of these is the assessment of the environment, Earthwatch, which consists of the four elements of evaluation, research, monitoring and information exchange. Earthwatch is required because:

- There are gaps in knowledge and action which must be established by evaluation;
- Research is needed in both the natural and the social sciences to fill these gaps;
- Monitoring is essential if environmental variables are to be studied on a continuous and systematic basis and environmental trends predicted.

Information exchange is a vital component of the action plan for the human environment, enabling the scientific and technological communities and decision-makers to be kept abreast of developments in knowledge.

Legislative authorities

The most important are:

(i) Resolutions of the General Assembly:

- Resolution 3326(XXIX), of 16 December 1974 paragraph 4(e), (g) and (h).

(ii) Decisions of the Governing Council of UNEP:

- Decision 1(I), section VII
- Decision 8A(II), sections II.1 and III.1
- Decision 29(III), paragraphs 9(h), (i) and (j) and 11(b)
- Decision 32(III).

Strategy and corresponding output

The strategy is set out below by reference to the four component parts of Earthwatch and to "outer limits", which

the Governing Council of UNEP decided should be treated within Earthwatch.

Evaluation or review is carried out annually by UNEP for some selected priority area or functional task of the programme. Data for the reviews are obtained from research, monitoring and information exchange mechanisms. The problem in each area or task is addressed, activities in hand analysed and gaps identified; the results are presented to the Governing Council as a basis for programme formulation. It is expected that the first cycle or reviews will have been completed by 1978; the second cycle will then be initiated.

environmental problems directly in touch with the sources all over the world which can provide that information.

Earthwatch will provide a clearer understanding of the "outer limits" of man's encroachment upon the life-supporting systems of the planet and upon the capacity of society to adapt to a rapidly changing environment. The outer limits programme has five components:

1. *Climatic changes*: to improve understanding of the physical process affecting climatic changes, assess the probabilities of climatic changes and provide information about the practical significance for mankind of possible climatic changes and man's impact on climate,



Ditches being dug to prevent soil erosion in Pena Blanca, Chile

Research is, and will continue to be, a major component of the environment programme; it is developed in each priority area according to identified needs. Research programmes and monitoring activities are closely interrelated.

UNEP's initiative in monitoring has been to establish a programme activity centre on GEMS which acts as co-ordinator between monitoring projects executed by other United Nations agencies or international organizations and as an initiator of some projects with the agencies in pursuance of the programme goals of GEMS. The programme activity centre has accordingly undertaken to co-ordinate, and in some cases initiate or expand such projects as the monitoring of various factors affecting human health, the monitoring of global and impact atmospheric pollution, the monitoring of ocean pollution and assessing and the monitoring of factors indicative of man's impact on the vegetation and soils of the planet.

The establishment of a programme activity centre for the International Referral System for sources of environmental information (IRS) is a major contribution to information exchange. IRS does not itself handle data, but provides a directory service. IRS will become fully operational during the next few years, putting those seeking information about

2. *Weather modification*: to develop principles and guidelines for the control of weather modification experiments which might otherwise damage the environment of other States or areas beyond national jurisdiction; a declaration of general principles will be placed before the General Assembly in due course;

3. *Increase of bioproductivity*: to obtain and apply knowledge about the mechanism of photosynthesis and certain elements in the biogeochemical cycle in order to overcome limitations to food productivity;

4. *Threats to the ozone layer*: to assess present knowledge about the impact of aircraft, chemical fertilizers and fluorocarbons on the ozone layer, develop a coherent programme of monitoring of ozone in the atmosphere and accelerate research into the effects of ultra-violet radiation;

5. *Social outer limits*: to examine the ability of society to adapt to a rapidly changing environment without social disruption, and the rate at which society can modify its values and practices in response to environmental imperatives.

Objective 9: Environmental management

To improve understanding of environmental management, thus enabling man to manage his environment to secure

sustainable development, and to develop and adapt legal means to serve this end.

Problems addressed

The experience gained through environmental assessment, Earthwatch, needs to be applied. To do this requires spreading a wider understanding at the national and international scale of how to manage human affairs and natural ecosystems so that the adverse impact on the environment is minimized. In particular, the opportunities offered by national and international law to promote improved standards of environmental management have largely been neglected. Law is often the most appropriate means of regulating national activities relating to the environment, and international relations in the same field; therefore it is an essential component of environmental management.

Legislative authorities

The most important are:

(i) Resolutions of the General Assembly:

- Resolution 3129(XXVIII) of 13 December 1973 and Resolution 3326(XXIX) of 16 December 1974, paragraph 4(f).

(ii) Decisions of the Governing Council of UNEP:

- Decision 1(I), section VIII; Decision 8A(II), section III.5; Decision 18(II); Decision 24(III); Decision 25(III); Decision 35(III) and Decision 44(III).

Strategy and corresponding output

The strategy for environmental management is implemented through numerous activities elsewhere, carried out under other objectives of the environment programme, and thus outputs from many parts of the programme help develop an understanding of environmental management. However, there are a number of activities specifically designed to promote an appreciation of the concept. These include:

- Efforts to ensure the incorporation of the environmental dimension in international deliberations (see also Objective 5);
- Joint programming between UNEP and other parts of the United Nations system to ensure that other programmes contribute to better environmental management;
- Identifying the "carrying capacity" of different ecosystems;
- Preparation of published guidelines for Governments to help them manage their environment better;
- With the United Nations Statistical Office, the development of a system of statistics which can serve the purposes of environmental management.

Specifically in relation to environmental law, the strategy contains these elements:

- The systematic collection of data about environmental legislation at the national and international levels;
- The elaboration of the principles which should govern the relationships between States which share natural resources, and in respect of liability and compensation for victims of pollution and other environmental damage;
- The promotion of international agreements or conventions to deal with global environmental problems, and the inclusion of environmental elements in agreements and

conventions primarily concluded for other purposes;

- Encouragement to universities, etc. to include environmental law within their curricula;
- Promotion of comparative studies of national environmental protection laws;
- Assistance to developing countries wishing to develop national environmental legislation.

Objective 10: Supporting activities

To encourage the development of activities which support the implementation of the environment programme, i.e. environmental education and training, technical assistance and information.

Problems addressed

The programme for the protection and improvement of the human environment ultimately depends upon education and training which can encourage an informed awareness of environmental considerations at all levels, upon technical assistance, especially to developing countries, and upon the dissemination of information to the public at large whereby public support and understanding can be fostered for activities which have an environmental purpose.

The subject of the environment is rarely incorporated in the syllabi at all pedagogic levels of education. In addition, the environmental dimension is seldom if at all included in policy-making, decision-making and in the administrative and management structures of both public and private sectors where environmental impact, and the management of the environment, becomes a major problem which requires specific education and/or training. A more appropriate design or plan for technical assistance devoted to the transformation of thinking and skills which the new dimension of the environment predicates is urgent and necessary. The need for an informed and educated public as part of the mechanism towards environmental change has hitherto been neglected; and development support communications links in the creation of an environmentally aware public become an important functional task.

Scant information about the environment was provided to the general public, especially in the developing world, and as a result there was little popular support for many environmental initiatives.

These problems have become less severe since the Stockholm Conference, but it is frequently demonstrated that they remain an obstacle to the pursuit of environmental goals. For that reason UNEP has supported many activities in education and training, in technical assistance and information, activities which form an integral part of the environment programme as a whole.

Legislative authorities

The most important are:

1. Resolutions of the General Assembly: Resolution 3326(XXIX), of 16 December 1974, paragraph 4(i).
2. Decisions of the Governing Council of UNEP: Decision 1(I), section III, paragraph 12(c), and sections VI and IX; Decision 8A(II), section II.3.; Decision 29(III), paragraphs 5, 6 and 7; Decision 39(III).

Strategy and corresponding output

The strategy for this objective is set out under the three heads of education and training, technical assistance and information; in many cases activities relating to the elements are already in hand.

1. *Education and training.* The strategy includes: The UNEP/UNESCO environmental education programme, which will lead, through an international conference in 1977, to the formulation of policy recommendations to Governments towards implementing environmental education programmes on national and regional levels. The establishment of the UNEP fellowship programme; The development of linkages with the United Nations University; The co-ordinated promotion of the environmental sciences — and training courses for specialists in particular — throughout the Spanish-speaking world, through the centre recently established at Madrid; A programme of environmental management education; The establishment of one regional programme activity centre in each region, which, with the support of UNESCO, will promote the co-ordination of environmental education and training.

In addition to the co-operative activities between UNEP and UNESCO in the field of environmental education and training, there are the following activities:

A programme in environmental education for the Arab countries, including the development of a teachers' manual organized by the Arab League Educational, Cultural and Scientific Organization. Also, two seminars on environmental education were organized by the Science Education Programme for Africa. In addition, a UNEP fellowship programme was established as an ongoing activity, conducted by incorporating fellowships in education and/or training programmes in projects with the specialized agencies, universities and other institutions.

In the field of environmental training, a principal development has been the establishment at Madrid, Spain, of an International Centre for Spanish-speaking people to promote environmental sciences in general and the training of specialists in particular. The centre is the co-ordinating point of a grouping of specialized institutions in Latin America, Spain and other Spanish-speaking countries. The centre provides training courses and studies in environmental sciences. It also disseminates information and generally assists the work of the other institutions in the system which includes the training of specialists in bio-ecological, socio-cultural and socio-economic fields.

Other activities in the field of training which are in progress include training elements which are covered by GEMS and IRS. In this way, training is being provided for urban managers, architects, town planners and engineers. A major programme aimed at planners and decision-makers is active in Asia, Africa and Latin America, making use of regional institutions.

A major resource and needs assessment survey was undertaken in all regions in 1975 and fourteen authors prepared papers on various aspects of environmental education at primary, secondary, university, youth and adult levels. Two main activities provided a basis for an international workshop held at Belgrade, Yugoslavia in October, 1975, the principal aims of which were to review

the trends and emerging issues of environmental education and to formulate guidelines and recommendations for furthering environmental education internationally.

2. *Technical Assistance.* The strategy includes:

Assistance to developing countries to enable them to make their contribution to the environment programme; responding to *ad hoc* requests, especially for "overview" advice on the environment; advisory teams attached to UNEP's regional offices will usually provide this service. The establishment of a "clearing-house" system for technical assistance needs; this method provides expertise from developed countries for the environmental needs of the developing countries, with UNEP acting as co-ordinator and catalyst. As environmentally trained people grow in numbers in developing countries, they can assist other developing countries. On 23 July 1975, the Executive Director addressed a communication to all member Governments, informing them of the establishment of the "clearing house". An *aide-memoire* was attached setting down the scope of the facility, its method of operation and certain related matters concerning its financing and administration. A programme of study tours to countries which have particularly useful experience to offer; during 1975, two tours took place to China, to study its methods of sand dune stabilization and schistosomiasis control.

3. *Information.* The strategy includes: Provision of a media reference service; Provision of materials for use by the media; Training and briefing sessions on the environment and the environment programme for media personnel; Assistance to developing countries in the establishment of media services in support of programme objectives; The inclusion of an information component within projects relating to the environment; Production of materials (films, exhibitions, etc.) for direct distribution; The co-ordination annually of events associated with World Environment Day (see annex IX); The implementation of a publications programme in support of the environmental programme; Co-operation with non-governmental organizations in order to extend the impact of public information about the environment; (see annex X); and Co-ordination of the environmental information activities of the United Nations system as a whole.

UNEP has participated in the Office of Public Information/Centre for Economic and Social Information initiative which resulted in the formation of the Joint United Nations Information Committee. Through this organ of the Interagency Administrative Committee on Co-ordination, efforts were made to integrate and co-ordinate the information activities of the United Nations system, by providing general information themes, while also allowing individual organizations within the United Nations system, as well as Government information departments, to incorporate an environmental dimension into their own information strategies and thus extend the impact of UNEP's information programme.

The Environment Fund

Introduction

The Environment Fund was created, in the words of the General Assembly resolution establishing UNEP, to "provide for additional financing for environmental programmes". The Fund was to be used, therefore, to help and encourage bodies inside and outside the United Nations system to participate in the implementation of the environment programme, described in the previous chapter²⁹. Total pledges to the Fund in the initial five-year period (1973-1977), based on amounts already received and announced, somewhat exceed the initial target of US\$100 million³⁰.

As the environment programme has been elaborated and UNEP's managerial capacity increased, there has been a corresponding rise in the level of expenditures and commitments. Thus the annual expenditures from the Fund on projects has grown from US\$418,000 in 1973 to US\$5,285,000 in 1974 and US\$12,943,000 in 1975, and commitments have increased similarly from US\$3.2 million in 1973 to US\$35 million in 1975.

The number of projects has, of course, increased too, and between the third and fourth sessions of the Governing Council (1975-1976) 139 projects were approved at a cost to the Fund of UNEP of US\$30.8 million³¹. From the establishment of UNEP to the time of the fourth session of the Governing Council, 379 projects have been approved at a total cost of US\$50,889,330.

As the pace has quickened, the initial problem of the Fund — a surplus of resources over expenditure — has become less marked. This was presented in detail to the Governing Council by the Executive Director in his introductory statement to the fourth session³².

More than half of all projects have been joint ventures involving co-operating agencies within the United Nations system³³. FAO and UNESCO remain particularly important in terms of the projects implemented with UNEP. Their combined share, 27.3 per cent, is almost half the total for all co-operating agencies. However, Fund programme activities (projects) foreseen for 1976-1977 would indicate that a larger number of activities will be initiated with other co-operating agencies, whose share is thus expected to increase.

The average cost to UNEP per project continued to rise from US\$45,000 in 1973, to US\$90,000 in 1974 and to US\$209,000 in 1975. It is felt that the optimum size should be still larger and that the number of new projects should be correspondingly reduced. This is likely to be achieved, since a number of preprogramming activities are now

developing into action programmes, thus facilitating the transition towards fewer, larger projects.

UNEP's global responsibilities mean that as far as possible a balance must be maintained in the geographical distribution of projects among the various regions. UNEP's Regional Representatives, supported by their regional advisory teams, will contribute to the development of more activities of regional significance³⁴.

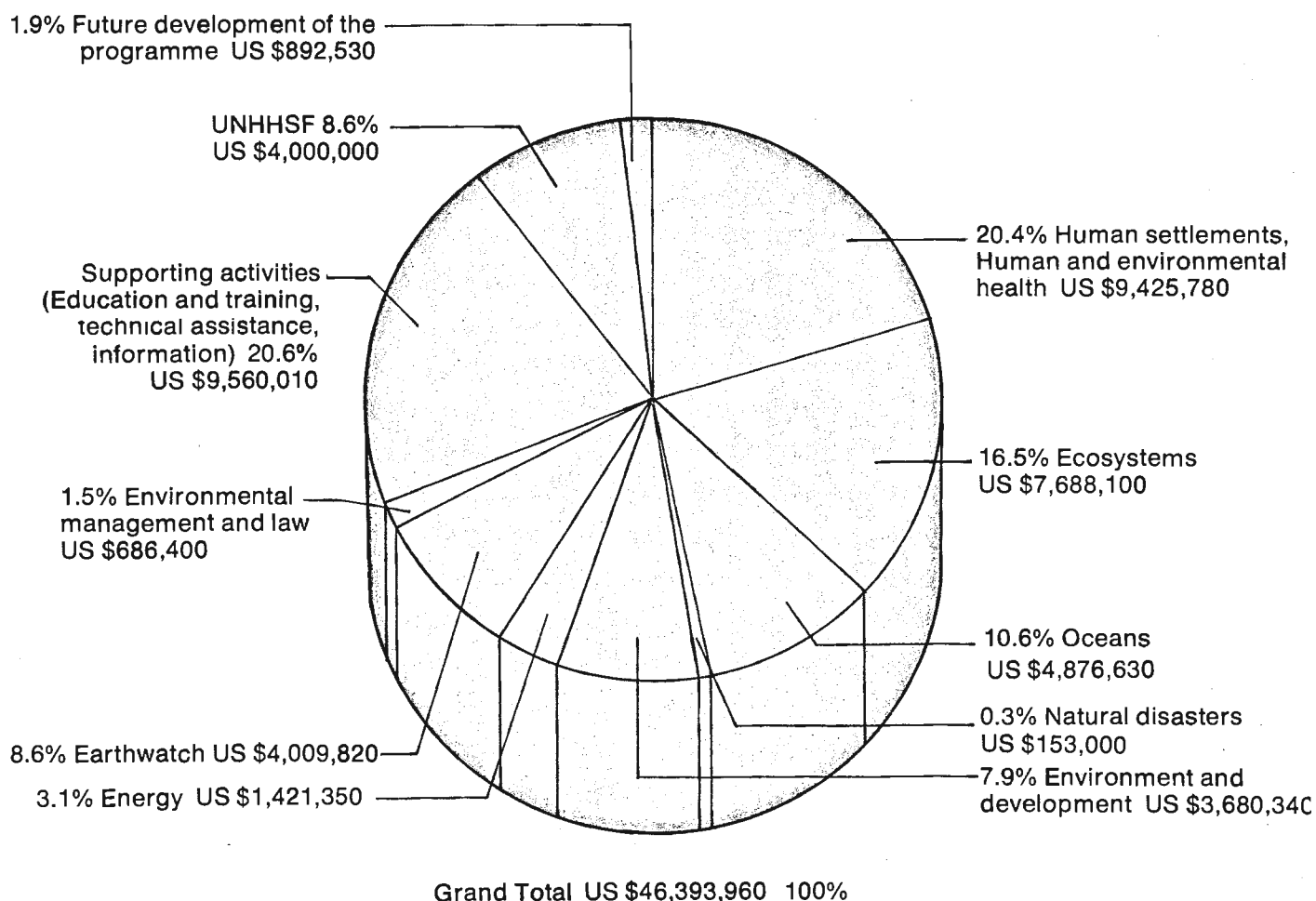
Estimates of resources for 1973-1977^a
(in US dollars equivalent). Status as at 15 March 1976

Country	Pledge for 1973-1977	Estimated 1973-1977	1973	1974	1975	1976	1977	Currency of pledge
Argentina ^b	160,000	160,000	—	40,000	40,000	40,000	40,000	US\$
Australia	2,500,000	2,500,000	500,000	500,000	500,000	500,000	500,000	US\$
Austria ^c	800,000	800,000	—	200,000	200,000	200,000	200,000	US\$
Belgium	1,250,000	1,250,000	250,000	250,000	250,000	250,000	250,000	US\$
Botswana	5,232	6,388	1,497	1,435	1,150	1,153	1,153	R
Brazil	40,000	80,000	—	20,000	20,000	20,000	20,000	US\$
Bulgaria ^d	6,666	6,666	—	—	—	3,333	3,333	Leva
Byelorussian SSR	52,632	52,632	—	—	17,544	17,544	17,544	Roubles
Canada	5,000,000 to 7,500,000	5,000,000 to 7,500,000	1,000,000	—	—	1,500,000	2,500,000 to 5,000,000	US\$
(100,000 received in 1972)								
China	263,207	1,278,435	263,207	253,807	253,807	253,807	253,807	50% US\$ 50% YRMB
Cuba	49,080	122,700	24,540	24,540	24,540	24,540	24,540	Cuba \$
Czechoslovakia ^e	204,964	204,964	—	50,590	51,458	51,458	51,458	Kos
Denmark	1,600,000	1,600,000	—	400,000	400,000	400,000	400,000	US\$
Egypt	20,000	30,000	—	—	10,000	10,000	10,000	US\$
Finland	700,000	900,000	150,000	150,000	200,000	200,000	200,000	US\$
France	6,775,962	6,775,962	1,360,671	1,242,236	1,445,783	1,363,636	1,363,636	FF
German Dem. Rep. ^f	319,800	319,800	—	81,469	81,469	78,431	78,431	90% M 10% US\$
Germany, Fed. Rep. of	7,810,468	7,810,468	—	2,407,000	1,941,930	1,730,769	1,730,769	DM
Ghana	39,446	70,192	—	11,023	19,723	19,723	19,723	US\$
Greece	10,000	20,000	—	5,000	5,000	5,000	5,000	US\$
Hungary	67,531	91,993	—	20,080	22,989	24,462	24,462	Ft
Iceland	10,000	18,000	2,000	4,000	4,000	4,000	4,000	US\$
India	289,060	489,060	95,780	95,780	97,500	100,000	100,000	50% US\$ 50% RS
Indonesia	20,000	40,000	—	10,000	10,000	10,000	10,000	US\$
Iran	80,000	200,000	40,000	40,000	40,000	40,000	40,000	US\$
Iraq	28,573	58,573	—	15,000	13,573	15,000	15,000	US\$
Israel	10,000	30,000	—	10,000	—	10,000	10,000	US\$
Italy ^g	1,600,000	1,600,000	—	400,000	400,000	400,000	400,000	US\$
Jamaica	6,000	10,000	2,000	2,000	2,000	2,000	2,000	US\$
Japan	10,000,000	10,000,000	1,000,000	1,500,000	2,000,000	2,500,000	3,000,000	US\$
Jordan	1,000	5,000	1,000	1,000	1,000	1,000	1,000	US\$
Kenya	150,000	150,000	30,000	30,000	30,000	30,000	30,000	US\$
Kuwait	100,000	100,000	—	—	33,300	33,300	33,400	US\$
Lesotho	1,000	3,000	—	—	1,000	1,000	1,000	US\$
Liberia	3,000	6,000	1,500	—	1,500	1,500	1,500	US\$
Luxembourg	20,000	40,000	—	10,000	10,000	10,000	10,000	US\$
Malta	3,980	6,450	1,350	1,315	1,315	1,235	1,235	M£
Mexico	600,000	1,000,000	200,000	200,000	200,000	200,000	200,000	US\$
Netherlands	1,500,000	1,500,000	300,000	300,000	300,000	300,000	300,000	US\$
New Zealand	337,200	337,200	79,221	72,360	72,419	56,600	56,600	NZ\$
Nigeria	60,000	100,000	20,000	20,000	20,000	20,000	20,000	US\$
Norway	2,203,672	2,203,672	421,277	437,368	484,157	430,435	430,435	N.Kr.
Pakistan	5,000	10,000	—	—	—	5,000	5,000	US\$
Peru	3,000	5,000	1,000	1,000	1,000	1,000	1,000	US\$
Philippines	20,000	50,000	10,000	10,000	10,000	10,000	10,000	US\$
Poland ^h	200,804	200,804	—	50,201	50,201	50,201	50,201	Z1
Portugal ⁱ	8,000	8,000	—	2,000	2,000	2,000	2,000	US\$
Qatar	10,000	40,000	—	10,000	10,000	10,000	10,000	US\$
Romania	50,300	50,300	10,060	10,060	10,060	10,060	10,060	Lei
Saudi Arabia	15,000	75,000	15,000	15,000	15,000	15,000	15,000	US\$
Senegal	1,104	3,104	—	1,104	—	1,000	1,000	US\$
Singapore	5,000	5,000	1,000	1,000	1,000	1,000	1,000	US\$
Spain	600,000	1,000,000	200,000	200,000	200,000	200,000	200,000	US\$
Sri Lanka	2,000	2,000	—	500	500	500	500	Rs.
Sudan	1,000	5,000	1,000	1,000	1,000	1,000	1,000	US\$
Swaziland	2,727	11,955	2,727	2,307	2,307	2,307	2,307	Rand
Sweden	5,000,000	5,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	US\$
Switzerland ^j	1,157,148	1,157,148	—	—	405,268	375,940	375,940	Sw.F.
Ukrainian SSR	126,315	126,315	—	—	42,105	42,105	42,105	Roubles
USSR	10,347,369	10,347,369	—	—	3,449,123	3,449,123	3,449,123	Roubles
United Kingdom	4,231,140	4,231,140	469,750	641,278	1,059,506	1,030,303	1,030,303	£

United States of America	40,000,000	22,500,000 to 25,000,000	4,300,000	5,000,000	3,200,000	5,000,000 to 7,500,000	5,000,000	US\$
Viet-Nam (Rep. of South)	1,000	4,000	—	1,000	1,000	1,000	1,000	US\$
Yugoslavia	100,000	100,000	20,000	20,000	20,000	20,000	20,000	Dinar
Zaire	60,000	110,000	25,000	25,000	10,000	25,000	25,000	US\$
Total	109,145,380	92,019,290 to 97,019,290	11,799,580	15,797,453	18,697,227	22,112,465 to 24,612,465	23,612,565 to 26,112,585	

- a. Estimates of future resources do not imply an undertaking of any kind on the part of countries and do not prejudice constitutional process with respect to future contributions.
- b Pledge of \$200,000 for 1974-1978
- c Pledge of \$800,000 for 1975-1978
- d Pledge of \$13,333 for 1976-1979
- e Pledge of \$256,422 for 1974-1978
- f Pledge of \$398,231 for 1974-1978
- g Pledge of \$2,000,000 for 1974-1978
- h Pledge of \$251,005 for 1974-1978
- i Pledge of \$10,000 for 1974-1978
- j Pledge of \$1,909,028 for 1975-1979

Distribution of projects in relation to the objectives of the Environment Programme 1973-1975



Projects approved (from third session of Governing Council to 31 December 1975)

01 — Human settlements, human health. FP/0104 - General development of human settlements (formerly 0101)

PROJECT TITLE	REGION	AGENCY	COST IN US \$		DURATION
			TOTAL	TO UNEP	
FP/0104-75-02 (557) Urban environment and urban employment in developing countries	Global	ILO	342,000	242,000	January 1975 December 1976
FP/0104-75-04 (713) Integrated ecological studies on human settlements as a basis for decision	Global	UNESCO/ WHO/INTECOL	65,000	38,500	April 1975 July 1975
FP/0104-75-05 (712) Evaluation of an integrated ecological study of a large urban conglomeration (Hong Kong)	Asia and the Pacific	UNESCO	171,600	61,900	April 1975 May 1976
FP/0104-75-06 (762) Assistance to the Capital Development Authority of Dodoma, Tanzania	Africa	CDA/ UNDP/OTC	10,443,600	398,500	August 1975 July 1977
FP/0104-75-07 (869) Human settlements managers' training programme (Phase I) (a) Pilot courses for human settlements managers (b) Assessment and evaluation of results	Africa, Asia & Latin America	UNESCO/ IDEP/CHBP	288,450	247,450	January 1975 June 1976

FP/0106 - HUMAN SETTLEMENTS TECHNOLOGY (Formerly 0101)

FP/0106-75-01 (219) Architecture and environment in the Arab region	W. Asia Africa & Middle East	ALECSO	45,000	45,000	September 1973 October 1975
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FP/0107 - ENVIRONMENTAL HEALTH (Formerly 0101 and 0102)

FP/0107-75-01 (631) Control of environmental contaminants in foods: Mycotoxins (Phase I)	Global	FAO	257,500	198,000	June 1975 December 1977
FP/0107-75-02 (647) Control of environmental contaminants in foods in East Africa (Phase I)	Africa	FAO/WHO	1,351,728	731,948	July 1975 December 1977
FP/0107-75-03 (704) has been changed to FP/0108-75-03 (704)					
FP/0107-75-04 (752) Evaluation of toxicity of environmental chemicals	Global	WHO	101,400	45,500	January 1975 November 1976
FP/0107-75-05 (839) International Register of Potentially Toxic Chemicals (IRPTC)	Global	Internal	214,000	214,000	July 1975 December 1976
FP/0107-75-06 (214) Strengthening the work of the FAO/WHO CODEX Alimentarius Commission and FAO/WHO capabilities to assist developing countries in food control (Phase II)	Global	FAO/WHO	483,400	346,400	February 1975 December 1977
FP/0107-75-07 (675) International training for control of environmental contaminants in food	Africa	FAO	833,800	565,300	July 1975

FP/0107-75-08 (841) has now been changed to FP/1000-75-03 (841)

PROJECT TITLE	REGION	AGENCY	COST IN US \$		DURATION
			TOTAL	TO UNEP	
FP/0107-75-09 (659) Support for symposium on new developments in mutagenicity testing of environmental chemicals	Global	Internal	15,000	15,000	September 1975 October 1975
FP/0107-75-10 (903) Environmental health criteria (Phase II)	Global	WHO	1,682,900	970,500	November 1975 December 1977
FP/0108 - PEST MANAGEMENT SYSTEMS (Formerly 0102 and 0205)					
FP/0108-75-01 (746) Substantive contribution of FAO <i>Ad hoc</i> Governmental Consultation on Pesticides in Agriculture and Public Health, 7-11 April 1975 - Rome	Global	Internal	4,000	4,000	March 1975 April 1975
FP/0108-75-03 (704) Support to International Conference on Schistosomiasis, Cairo, October 1975	Global	Government of Egypt	321,600	124,250	March 1975 November 1975
FP/0108-75-04 (780) Initiation and co-ordination of a UNEP/FAO Co-operative Global Programme for the development and application of integrated pest control in agriculture	Global	FAO	221,000	135,000	July 1975 June 1977
FP/0108-75-05 (745) Meeting on bio-environmental methods of control of malaria - 10-15 December 1975, Lima, Peru	Global	WHO	111,700	93,700	July 1975 March 1976
FP/0108-75-06 (668) Consultation on pest management systems for the control of pests	Global	FAO	93,550	68,300	April 1975 March 1976
FP/0108-75-07 (407) Environmental and economic study of the consequences of pesticide use in Central American cotton production (Phase B)	Latin America	ICAITI	240,450	152,500	May 1975 April 1976
FP/0301 - TRAINING AND EDUCATION					
FP/0301-75-02 (622) Wood preservation seminar, Papua New Guinea	Asia and the Pacific	Papua New Guinea	65,700	27,000	January 1975 July 1975
FP/0301-75-03 (403) Course for national planners and decision-makers: an introduction to environmental principles	Asia and the Pacific	AIEDP	57,700	40,900	January 1975 July 1975
FP/0301-75-04 (715) Support for the Colloquium on Recycling and Disposal of Solid Wastes	Global	University of Nottingham	13,500	13,200	1 week April 1975
FP/0301-75-05 (652) Audio-visual and other teaching aids for workers (production phase)	Global	ILO	115,000	74,000	October 1974 September 1975
FP/0301-75-06 (661) Publication of an environmental teaching manual for workers' educators	Global	ILO	72,500	48,500	May 1975 April 1976
FP/0301-75-07 (708) Programme of environmental education for students from developing countries	Global	Washington University	126,460	96,250	July 1975 August 1976

PROJECT TITLE	REGION	AGENCY	COST IN US \$		DURATION
			TOTAL	TO UNEP	
FP/0301-75-08 (760) Establishment of an international centre in Spain for environmental sciences education for Spanish-speaking countries (preparatory activity)	Global	Internal	36,500	36,500	June 1975 August 1975
Phase I	Global	Spain	4,444,300	937,900	September 1975 December 1977
FP/0301-75-09 Establishment of programme activity centres on environmental education and training (P.A.I.)	Africa	Internal	19,500	19,500	December 1975 April 1976
FP/0302 - TECHNICAL ASSISTANCE					
FP/0302-75-07 (724) Environmental audit of Bougainville copper maine operation (P.A.I.)	Asia and the Pacific	UN/ESA	8,600	4,600	May 1976 June 1976
FP/0302-75-08 (819) Advisory service to the Government of Lesotho	Africa	Internal	14,600	14,600	February 1976 June 1976
FP/0302-75-09 (842) Further assistance to the Capital Development Authority of Dodoma, Tanzania	Africa	Internal	8,000	8,000	July 1975 October 1975
FP/0302-75-10 (593) Advisory service to the Government of Senegal	Africa	Internal	8,700	8,700	July 1975 September 1975
FP/0302-75-11 (853) Provision of transport assistance between Kigali, Rwanda and Garoua, Cameroon for 5 Rwandese students to attend the College of Wildlife Management for French-Speaking Countries	Africa	Internal	5,000	5,000	August 1975 April 1976
FP/0302-75-12 (874) Regional advisory teams for Africa, ESCAP region, Latin America and West Asia	Global	Internal	2,517,550	2,517,550	September 1975 December 1977
FP/0302-75-13 (838) Evaluation and assessment of environmental machineries and assistance to 15 selected African countries	Africa	ECA	120,500	117,000	November 1975 July 1976
FP/0303 - INFORMATION					
FP/0303-75-04 (775) World development study and action pack	Global	UNDP	100,000	20,000	July 1975 December 1975
FP/0303-75-05 (972) Study on environmental influences on health	Global	Worldwatch Institute	98,500	80,500	January 1976 January 1977
FP/0303-75-06 (889) IIED Thematic media information programmes	Global	IIED	229,750	158,750	November 1975 December 1976
FP/0303-75-07 (973) Preparation and publication of an annual report (for public information)	Global	Internal	39,000	39,000	December 1975 March 1976

PROJECT TITLE	REGION	AGENCY	COST IN US \$ TOTAL	TO UNEP	DURATION
FP/0402 - TECHNOLOGY					
FP/0402-75-01 (607) Transfer of technology and interrelated environmental problems	Global	UNCTAD	778,000	457,000	January 1975 December 1977
FP/0402-75-02 (826) Environmentally sound and appropriate technologies (P.A.I.)	Global	Internal	89,500	89,500	August 1975 July 1976
FP/0402-75-03 (596) Information on low-waste technologies	Global	Transnational Research Centre, Austria	38,000	20,000	May 1975 February 1976
FP/0402-75-04 (764) Development and application of appropriate technology for the sugar industry: pilot project for Africa (Phase I)	Africa	UNIDO	226,000	200,000	November 1975 February 1976
FP/0404 - INTEGRATED APPROACH TO ENVIRONMENT AND DEVELOPMENT (Formerly 0401 and 0403)					
FP/0404-75-01 (585) Development of a methodological model for integrated analysis of environmental effects related to the development of a hydrographic basin	Latin America	OAS	121,700	82,700	July 1975 July 1976
FP/0404-75-04 (873) Report on environment and development (P.A.I.)	Global	Internal	10,000	10,000	July 1975 October 1975
FP/0404-75-05 (788) Training course on environment and development	Latin America	Universidad Autonoma Metropolitana, Mexico	197,200	72,340	June 1975 January 1976
FP/0404-75-06 (885) Environment-development relationships in developing countries	Global	Centre International pour le Développement	73,500	55,700	August 1975 February 1976
FP/0404-75-07 (794) Support to the international congress of scientists on the human environment 16-26 November 1975; Kyoto, Japan	Global	Science Council of Japan	286,000	48,000	September 1975 March 1976
FP/0405 - ECODEVELOPMENT (Formerly 2004)					
FP/0405-75-01 (656) Studies and backstopping services for ecodevelopment programmes	Global	Internal	100,000	100,000	May 1975 December 1975
FP/0405-75-02 (707) Preliminary evaluation study for pilot ecodevelopment project in Columbia: Sierra Nevada de Santa Marta	Latin America	Internal	18,000	18,000	August 1975 January 1976
FP/0405-75-03 (851) Ecodevelopment approach to the study of parasitic zoonoses (P.A.I.)	Africa	Internal	17,500	17,500	September 1975 January 1976

PROJECT TITLE	REGION	AGENCY	COST IN US \$		DURATION
TOTAL	TO UNEP				
FP/0501 - MARINE POLLUTION					
FP/0501-75-01 (692) International Workshop on Marine Pollution in Asian Waters	Asia and the Pacific	IOC/UNESCO	76,000	58,000	April 1975 April 1976
FP/0501-75-02 (758) Technical Symposium on Prevention of Marine Pollution from Ships	Global	IMCO	169,500	60,000	January 1975 September 1976
FP/0501-75-03 (542) Evaluation of releases of radionuclides into the aquatic environment	Global	IAEA	97,000	22,000	July 1975 December 1977
FP/0501-75-04 (814) Level one overview - marine pollution	Global	IOC/UNESCO	19,000	19,000	June 1975 October 1975
FP/0502 - LIVING MARINE RESOURCES					
FP/0502-75-01 (706) Regional co-operation on protection of living aquatic resources from pollution and basis for biological monitoring	Global	FAO	181,300	127,000	April 1975 March 1977
FP/0502-75-02 (806) Level one overview - living marine resources	Global	FAO	18,000	16,000	May 1975 October 1975
FP/0503 - REGIONAL ACTIVITIES					
FP/0503-75-03 (591) Mediterranean programme activity (promotion of the establishment of marine parks and reserves in the Mediterranean) MED. III	Europe and Mediterranean	IUCN	61,500	48,900	January 1975 December 1975
FP/0503-75-04 (979) The Mediterranean programme activity: Intercalibration measurements for pilot projects under the co-ordinated pollution monitoring and research programme - MED. IV	Europe and Mediterranean	IAEA/IOC of UNESCO	78,000	44,000	January 1976 December 1977
FP/0503-75-05 (849) The Mediterranean programme activity (protocol on land-based sources of pollution - convention for the protection of the marine environment against pollution in the Mediterranean) MED. II	Europe and Mediterranean	WHO	45,000	30,000	July 1975 March 1976
FP/0503-75-06 (852) The Mediterranean programme activity (pilot projects on oil pollution and coastal circulation in the Mediterranean - preparatory phase covering technical meeting to prepare plans of operation) MED. V	Europe and Mediterranean	IOC/UNESCO WMO	43,500	40,500	July 1975 December 1975
FP/0503-75-07 (880) Mediterranean programme activity - joint FAO(GFCM)UNEP co-ordinated project on monitoring the levels and effects of selected pollutants in Mediterranean marine organisms and ecosystems - MED. VIII	Europe and Mediterranean	FAO	1,450,565	1,244,000	October 1975 September 1977
FP/0503-75-08 (886) Mediterranean programme activity - joint WHO/UNEP co-ordinated pilot project on coastal water quality in the Mediterranean (Phase I) MED. VII	Europe and Mediterranean	WHO	66,000	40,000	August 1975 December 1975

PROJECT TITLE	REGION	AGENCY	COST IN US \$		DURATION
			TOTAL	TO UNEP	
FP/0503-75-09 (860) Expert support for the prefeasibility study of coastal area development in Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates	Western Asia	UN/ESA	61,900	15,000	September 1975 August 1976
FP/0503-75-10 (854) Mediterranean programme activity - "blue plan" for action in the Mediterranean region - preparatory phase - MED. X	Europe and Mediterranean	Med. Workshop for Prospective Research	80,000	40,000	November 1975 July 1976
FP/0700 - ENERGY					
FP/0700-75-01 (792) Regional centres for the nuclear fuel cycle	Global	IAEA	417,800	73,200	January 1976 January 1978
FP/0700-75-02 (717) Systems study of energy and climate - Phase I	Global	IIASA	750,000	300,000	January 1976 October 1978
FP/1000 - ENVIRONMENTAL MANAGEMENT (Formerly 0204 and 2007)					
FP/1000-75-03 (841) IFIAS/UNEP workshop on environment and development	Global	IFIAS	60,000	23,500	1 week October 1975
FP/1000-75-04 (672) Preparation of a guide on environmental protection and management	Global	Internal	35,000	35,000	March 1975 May 1976
FP/1000-75-05 (824) Review of food and agriculture submodels of global models	Global	IIASA	71,000	43,000	January 1975 February 1976
FP/1101 - ARID LANDS AND GRAZING ECOSYSTEMS (Formerly 0201, 0202 and 0206)					
FP/1101-75-02 (265) Ecological guidelines for use of natural resources in the Middle East and South-West Asia	West Asia	IUCN	34,000	15,000	January 1975 November 1975
FP/1101-75-05 (670) Integrated ecological studies in the arid zone to promote rehabilitation and development (preparatory activities)	Africa	UNESCO	19,600	19,100	September 1975 December 1975
FP/1101-75-06 (730) Environmental implications of irrigation with special reference to arid lands: Assessment of knowledge and development and guidelines for environmental impact assessment	Global	UNESCO/COWAR/SCOPE	183,500	112,000	February 1975 September 1976
FP/1102 - TROPICAL WOODLANDS AND FORESTS ECOSYSTEMS (Formerly 0202 and 0206)					
FP/1102-75-02 (770) Research programme for the semi-arid tropics of specific environmental significance	Global	ICRISAT	3,925,000	170,000	January 1975 December 1975
FP/1102-75-03 (771) Research programme for tropical agriculture of specific environmental significance	Global	CIAT	5,453,000	70,000	January 1975 December 1975

PROJECT TITLE	REGION	AGENCY	COST IN US \$		DURATION
			TOTAL	TO UNEP	
FP/1102-75-04 (698) Regional meeting on integrated ecological research and training activities in South Asia (Varanasi, India, October 1975)	Asia and the Pacific	UNESCO	87,800	62,200	April 1975 December 1975
FP/1102-75-05 (821) Pilot project on tropical forest cover monitoring	Global	FAO	1,058,000	557,000	September 1975 October 1977
FP/1103 - ECOSYSTEMS, SITES AND SAMPLES (NATIONAL PARKS AND RESERVES) (Formerly 0602, 0603 and 0605)					
FP/1103-75-02 (686) South Pacific Conference on National Parks and Reserves	Asia and the Pacific	New Zealand, South Pacific Commission and IUCN	53,300	13,000	1 week February 1975
FP/1103-75-04 has been changed to RA/1103-75-04					
FP/1103-75-05 (688) Survey and establishment of biosphere reserves in South East Asia	Asia and the Pacific	UNESCO	233,000	166,000	August 1975 December 1976
FP/1103-75-06 (815) Level one overview: ecosystems, sites and samples (National parks and reserves)	Global	UNESCO	16,900	16,900	May 1975 October 1975
FP/1104 - ENDANGERED SPECIES AND WILDLIFE (Formerly 0601)					
FP/1104-75-02 (685) Regional information exchange in wildlife and and national park management for Asia and the Far East (Tiger Paper)	Asia, Far East and Pacific	FAO	21,400	6,400	January 1975 December 1976
FP/1104-75-03 (813) Level one overview - endangered species and wildlife	Global	IUCN	19,000	19,000	June 1975 September 1975
FP/1104-75-04 International Annotated Seal Bibliography	Global	ICES	17,000	5,000	November 1975 April 1976
FP/1105 - OTHER ECOSYSTEMS (GENERAL, MOUNTAINS, ISLANDS, ETC.) (Formerly 0201 and 0202)					
FP/1105-75-01 (785) Sub-regional seminar and workshop on conservation and integrated management of natural ecosystems for decision-makers, senior administrators, and professional natural resources officers in South Eastern Africa	Africa	UNESCO	44,240	29,640	April 1975 May 1976
FP/1105-75-02 (701) Integrated research, training and information programme in the Andean region, with special reference to problems of human settlements, tourism and conservation	Latin America	UNESCO	156,400	101,600	August 1975 July 1976
FP/1106 - SOILS (Formerly 0207 and 0201)					
FP/1106-75-01 (437) Control of water logging and salinity in the areas west of the Nubaria Canal, Egypt	Africa	FAO	2,824,932	135,432	August 1975 January 1977
FP/1106-75-02 (664) Agroclimatological and hydrological studies in the Sudano-Sahelian zone	Africa	WMO	150,600	95,100	March 1975 February 1978

PROJECT TITLE	REGION	AGENCY	COST IN US \$		DURATION
			TOTAL	TO UNEP	
FP/1106-75-03 (769) Rice research programme of specific environmental significance	Global	IRRI	5,111,000	70,000	January 1975 December 1975
FP/1106-75-04 (772) Research in mixed cropping and related studies on soil fertility and plant nutrition in tropical agriculture	Global	IITA	1,008,000	120,000	January 1975 December 1975
FP/1106-75-05 (667) World assesement of soil degradation (Phase I)	Global	FAO/UNESCO	1,005,300	541,500	June 1975 May 1978
FP/1106-75-06 (820) The mediterranean programme activity (role of sedimentation in the pollution of the Mediterranean Sea: Assessment of knowledge and development of guidelines for environmental impact assessment) MED. IX	Mediterranean	UNESCO	64,500	47,000	October 1975 April 1977
FP/1107 - WATER (Formerly 0208 and 0203)					
FP/1107-75-02 (754) Book on water quality models (P.A.I.)	Global	Internal	27,500	27,500	November 1975 August 1976
FP/1107-75-03 (77) EUTROSYM '76 International Symposium on Eutrophication of Surface Waters and their Rehabilitation (Karl-Marx-Stadt, German Democratic Republic)	Global	Ministry for Environment Protection and Water Management of the German Democratic Republic	546,240	260,820	June 1975 December 1976
FP/1107-75-04 (766) Regional preparatory programme for the United Nations Water Conference, Brazil, 1977 (Phase I)	Global	UN, REG COMM, ESA, CNRET	547,000	164,500	July 1975 December 1976
FP/1107-75-05 (801) Workshop on water management for arid lands	W. Asia/ Africa	Internal/FAO/ Government of Egypt	70,000	50,000	2 weeks April or May 1976
FP/1108 - GENETIC RESOURCES (Formerly 0604)					
FP/1108-75-01 (811) Level one overview - genetic resources	Global	FAO	29,000	27,000	May 1975 October 1975
FP/1108-75-02 (777) Programme of research and development of pest- and disease-resistant varieties of maize and wheat	Global	CIMMYT	472,000	70,000	January 1975 December 1975
FP/1108-75-03 (837) Development of an integrated programme in the use and preservation of microbial strains for development in environmental management	Global	UNESCO	927,000	480,000	July 1975 December 1977
FP/1108-75-04 (793) International Board for Plant Genetic Resources - conservation of crop genetic resources	Global	IBPGR	729,000	100,000	July 1975 December 1975

PROJECT TITLE	REGION	AGENCY	COST IN US \$		DURATION
			TOTAL	TO UNEP	
FP/1108-75-05 (847) Conservation of forest genetic resources	Global	FAO	777,000	328,000	October 1975 December 1977
FP/1108-75-06 (773) Improving the nitrogen contribution from legume rhizobia to crops, and to soil fertility	Global	IITA	1,345,000	230,000	October 1975 October 1977
FP/1108-75-07 (848) Development of a co-ordinated international programme on biological nitrogen fixation	Global	FAO	202,000	130,000	December 1975 November 1976
FP/1109 - UNITED NATIONS CONFERENCE ON DESERTIFICATION ¹					
FP/1109-75-01 (767) International co-operation to combat desertification - (Phase I and Phase II)	Global	Internal	10,900	10,900	February 1975 May 1975
			332,890	332,890	May 1975 April 1976
FP/1109-75-02 (892) Preparation of a draft world map of desertification and desert map of Africa north of the equator	Global	FAO	186,352	115,500	July 1975 March 1977
FP/1109-75-03 (893) Revision and re-issue of map of arid and semi-arid zones of the world	Global	UNESCO	55,500	49,900	September 1975 August 1976
¹ Activities are fully reported in document UNEP/GC/67.					
FP/1200 - NATURAL DISASTERS					
FP/1200-75-01 (941) Selection of hurricane and early warning, including flood forecasting, systems for operation in Central America	Latin America	WMO	122,000	79,000	January 1976 December 1977
FP/1200-75-02 (942) Tropical cyclone monitoring and early warning systems in countries in the areas of the Bay of Bengal and the Arabian Sea	Asia and the Pacific West Asia	WMO	163,000	74,000	January 1976 December 1976
FP/1301 - GEMS (Formerly 0800)					
FP/1301-75-01 (512) Marine environmental monitoring and marine living resource assessment programme for the Indian Ocean region (Phase I - survey of institutional capabilities)	Asia, Far East and Pacific	CSIR	64,000	40,000	June 1975 January 1976
FP/1301-75-02 (789) International Conference on Environmental Sensing and Assessment	Global	University of Nevada, USEPA, WHO	120,880	20,880	5 days September 1975
FP/1301-75-03 (898) Air pollution monitoring	Global	WHO	794,000	444,000	November 1975 October 1978

PROJECT TITLE	REGION	AGENCY	COST IN US \$		DURATION
			TOTAL	TO UNEP	
FP/1301-75-04 (935) Preparation of a meeting of Government experts to assist in designing and implementing monitoring activities to assess selected critical environmental problems arising from agricultural and land-use practices	Global	FAO	37,000	35,000	October 1975 January 1976
FP/1302 - IRS (Formerly 0900)					
FP/1302-75-01 (750) Accelerated development of ASFIS, the Aquatic Sciences and Fisheries Information System; mechanization, improving coverage and broadening scope in order to provide a comprehensive service for the marine and fresh water scientific community throughout the world	Global	FAO/IOC/ICSPRO/ United Nations UNESCO	804,516	250,000	January 1976 December 1978
FP/1302-75-02 (388) FAO Catalogue of current legislation on environment and natural resources	Global	FAO	94,850	46,106	December 1975 January 1977
FP/1303 - OUTER LIMITS (Formerly 2001)					
FP/1303-75-03 (795) UNEP/IIASA Liaison and research on outer limits, basic human needs, and environmental effects on energy strategies	Global	IIASA	130,000	106,000	September 1975 August 1977
FP/1303-75-04 (829) UNEP/WMO Expert Meeting on Legal Aspects of Weather Modification	Global	UNEP/WMO	20,000	20,000	1 week December 1975
FP/1303-75-05 (845) MIT International Environmental monitoring Programme	Global	MIT	248,142	58,000	October 1975 September 1977
FP/1303-75-06 (864) Preparation of a review on the atmosphere transport and mixing processes	Global	Institution for Environmental Studies, University of Toronto, Canada	9,090	9,090	November 1975 April 1976
FP/1303-75-07 (808) Drought and man	Global	IFIAS	225,000	112,500	November 1975 April 1978
FP/1400 - ENVIRONMENTAL LAW (Formerly 2005)					
FP/1400-75-02 (948) Working Group on Shared Natural Resources	Global	Internal	77,500	77,500	October 1975 January 1976
FP/1500 - UNHHSF (Formerly 0103 IHHSF and 0101)					
FP/1500-75-01 (467) United Nations Habitat and Human Settlements Foundation (UNHHSF)	Global	UNHHSF	4,000,000	4,000,000	January 1975 December 1978
RA, RB - FUND PROGRAMME RESERVE					
RA/0302-75-02 (796) Advisory service to the Government of Dahomey	Africa	Internal	2,900	2,900	1 week August 1977

PROJECT TITLE	REGION	AGENCY	COST IN US \$		DURATION
			TOTAL	TO UNEP	
RA/0404-75-03 (828) Study of new forms of international co-operation	Global	The Brookings Institute United States	179,000	42,600	September 1975 August 1977
RA/1103-75-04 (686) Conservation and development programme strategy for ecosystem conservation, promotion and co-ordination of action	Global	IUCN	3,098,500	1,541,000	May 1975 December 1977
RA/0700-75-05 (797) Rural energy centres (P.A.I.)	Global	Internal	120,000	120,000	November 1975 February 1976
RA/1000-75-06 (986) Guidelines for national environment reports in developing countries	Global	TECNECO	109,000	90,000	January 1976 June 1976
RB/0303-75-01 (759) NGO Environmental profile survey	Global	NGO ELB	100,000	72,500	August 1975 August 1976

Institutional distribution of projects approved 1973-1975

	%	Co-operating agencies ^a	US \$
	0.2	ECA	117,000
	0.0	ECE	20,000
	0.9	ECLA	446,550
	14.1	FAO	6,788,600
	0.8	IAEA	369,800
	1.2	IDEP	600,000
	1.0	ILO	468,400
	0.1	IMCO	60,000
	3.3	UNCTAD	1,610,500
	0.6	UNDRO	265,000
	0.1	UNDP	20,000
	1.8	UNESA	839,190
	9.6	UNESCO	4,662,100
	1.3	UNESCO/IOC	628,250
	0.8	UNIDO	380,000
	8.2	UNHHSF	4,000,000
	6.2	UN/HABITAT	3,000,000
	0.0	UNRISD	14,000
	0.1	World Bank	55,800
	4.4	WHO	2,162,130
	1.6	WMO	795,610
Sub-total	56.3		27,33,830
Supporting organizations	19.8		9,620,920
Direct contracting ^{b/}	23.9		11,557,970
Grand Total	100.0		48,512,720

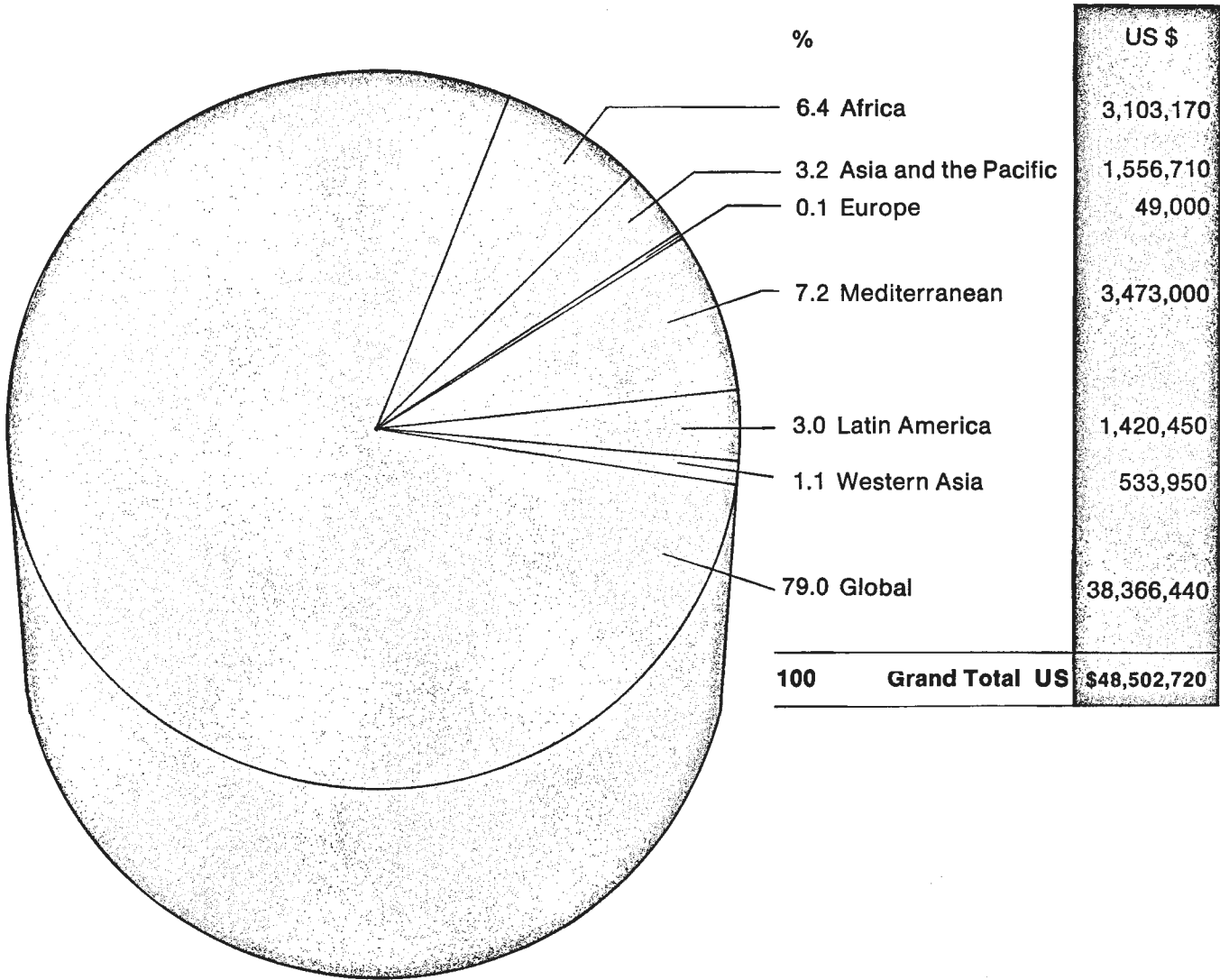
^a See list of abbreviations below.

^b These are regarded as "Internal" projects.

List of abbreviations

ECA	Economic Commission for Africa	UNESA	United Nations Department of Economic and Social Affairs
ECE	Economic Commission for Europe	UNESCO	United Nations Educational, Scientific and Cultural Organization
ECLA	Economic Commission for Latin America	UNESCO/IOC	UNESCO/Inter-Governmental Oceanographic Commission
FAO	Food and Agriculture Organization of the United Nations	UNIDO	United Nations Industrial Development Organization
IAEA	International Atomic Energy Agency	UNHHSF	United Nations Habitat and Human Settlements Foundation
IDEP	African Institute for Economic Development and Planning	UN/HABITAT	United Nations Conference on Human Settlements
ILO	International Labour Organisation	UNRISD	United Nations Research Institute for Social Development
IMCO	Inter-Governmental Maritime Consultative Organization	WHO	World Health Organization
UNCTAD	United Nations Conference on Trade and Development	WMO	World Meteorological Organization
UNDRO	Office of the United Nations Disaster Relief Co-ordinator		
UNDP	United Nations Development Programme		

Geographical distribution of projects 1973-1975



Annex A

The Governing Council

The Governing Council was established by United Nations General Assembly resolution 2997 (XXVII). It is composed of fifty-eight member States elected by the General Assembly for three-year terms, on the following basis:

16 seats : African States

13 seats : Asian States

10 seats : Latin American States

6 seats : Eastern European States

13 seats : Western European and other States

The assigned tasks of the Governing Council are to:

- Promote international co-operation in environment and to recommend, as appropriate, policies to this end;
- Provide general policy guidance for the direction and co-ordination of environmental programmes within the United Nations system;
- Receive and review periodic reports of the UNEP Executive Director on implementation of environment programmes within the United Nations;
- Keep under review the world environmental situation;
- Promote the contribution of relevant scientific and professional institutions to the acquisition, assessment and exchange of environmental knowledge;
- Maintain under continuing review the impact of national and international environmental policies and measures on developing countries, costs, etc.;
- Review and approve, annually, ways in which resources of the Environment Fund are used.

Governing Council activities include reporting annually to the United Nations General Assembly through the Economic and Social Council, which stresses matters of co-ordination and the relationship of environmental policies and programmes within the United Nations to over-all economic and social policies and priorities.

The Governing Council also holds annual sessions to review UNEP progress, make further proposals, take decisions and approve changes, amendments, etc.

The Governing Council's objectives are two-fold:

That "quality of human life should constitute the central concern of the Programme and that therefore the enhancement of the total human habitat and the study of environmental problems having an immediate impact on man should be given the highest priority in the over-all programme";*

That the fundamental task of the Programme should be the identification of major environmental problems as well as environmental management activities and supporting measures including:

- Technical assistance to Governments in promoting environmentally related measures;
- Aid to train personnel requiring specialized skills;
- All forms of aid, including financial, to strengthen national and regional institutions;
- Relevant materials to support public information and educational programmes on environment.

*UNEP pamphlet: "Your United Nations Environment Programme".

Annex B

The Environment Co-ordination Board

The United Nations Environment Programme is charged with exercising a co-ordinating role throughout, and to some extent beyond, the United Nations system and to promote co-operation among national and international organizations and encouraging them to give due emphasis to the environment in their deliberations.

The Environment Co-ordination Board was established by General Assembly Resolution 2997 (XXVII), of December 1972, when the General Assembly decided that . . . "in order to provide for the most efficient co-ordination of United Nations environmental programmes, an Environment Co-ordination Board, under the chairmanship of the Executive Director of the United Nations Environment Programme, shall be established under the auspices and within the framework of the Administrative Committee on Co-ordination"; and that the Board will ". . . meet periodically for the purpose of ensuring co-operation and co-ordination among all bodies concerned in the implementation of environmental programmes and that it shall report annually to the Governing Council of the United Nations Environment Programme. . .".

The Environment Co-ordination Board is composed of heads of organizations within the United Nations System, including:

- International Labour Organisation (ILO)
- Universal Postal Union (UPU)
- International Civil Aviation Organization (ICAO)
- International Monetary Fund (IMF)
- Food and Agriculture Organization of the United Nations (FAO)
- United Nations Educational, Scientific and Cultural Organization (UNESCO)
- World Health Organization (WHO)
- World Bank
- World Meteorological Organization (WMO)
- Inter-Governmental Maritime Consultative Organization (IMCO)
- International Atomic Energy Agency (IAEA)
- General Agreement on Tariffs and Trade (GATT)
- United Nations High Commissioner for Refugees (UNHCR)
- World Food Programme (WFP)

The main purpose of the Board is to ensure a co-ordinated approach by the entire United Nations system on environmental issues. The Environment Co-ordination Board is a means whereby UNEP influences the programmes of the United Nations agencies and *vice versa*. To facilitate these processes, the Board has established groups or task forces to examine specific areas of the programme, such as Earthwatch, Water, Arid Lands.

Annex C

Permanent Representatives accredited to the United Nations Environment Programme

(This section contains names of Permanent Representatives accredited as at 31 December, 1975)

Nos.	Name of Country	Representative
1.	Argentina	H.E. Mr. D. Vicente G. Arnaud (Ambassador)
2.	Australia	H.E. Mr. W.B.J. Handmer (High Commissioner)
3.	Canada	H.E. Mr. G.A. Rau (High Commissioner) Mr. Donald W. Campbell (Counsellor) Deputy Permanent Representative
4.	Colombia	H.E. Mr. G. Nannetti G. (Ambassador)
5.	Denmark	H.E. Mr. H. Kühne (Ambassador) Mr. P. Seiersen (2nd Secretary) Deputy Perma- nent Representative
6.	Finland	Mr. G. Castrén (Chargé d'Affaires a.i.)
7.	France	H.E. Mr. Olivier Deleau (Ambassador) Mrs. Anne-Marie Epstein (Attaché - Administration) Deputy Permanent Representative
8.	Germany, Fed. Rep. of	H.E. Dr. H. Heimsoeth (Ambassador)
9.	India	H.E. Air Chief Marshal Arjan Singh (High Commissioner)
10.	Iran	H.E. Mr. A. Kazemi (Ambassador)
11.	Italy	H.E. Mr. F. Meccaferri (Ambassador)
12.	Japan	H.E. Mr. Masani Ota (Ambassador)
13.	Pakistan	H.E. Mr. Makhdumzada S. Hamid Raza Gilani (Ambassador)
14.	Philippines	H.E. Dr. Mauro O. Baradi (Ambassador)
15.	Poland	H.E. Mr. Z. Lesiak (Ambassador)
16.	Somalia	H.E. Mr. Jaallee Awil Haji Ali (Ambassador)
17.	Spain	H.E. Mr. Miguel Angel Velarde (Ambassador)

18.	Sri Lanka	H.E. Mr. Wilfred Wijekulasuriya (High Commissioner)
19.	Sudan	H.E. Mr. Hashim Osman Ahmed (Ambassador)
20.	Sweden	H.E. Mr. Lennart Rydfors (Ambassador) Mr. Stellan Kronvall (Deputy Permanent Represen- tative)
21.	Switzerland	H.E. Mr. Richard Pestalozzi (Ambassador) Mr. Richard C. Wolf (1st Secretary) Deputy Permanent Representative
22.	United States of America	Mr. Edward P. Noziglia (Counsellor)
23.	Zaire	H.E. Mr. Matungulu N'Kuman Tavun (Ambassador)

Annex D

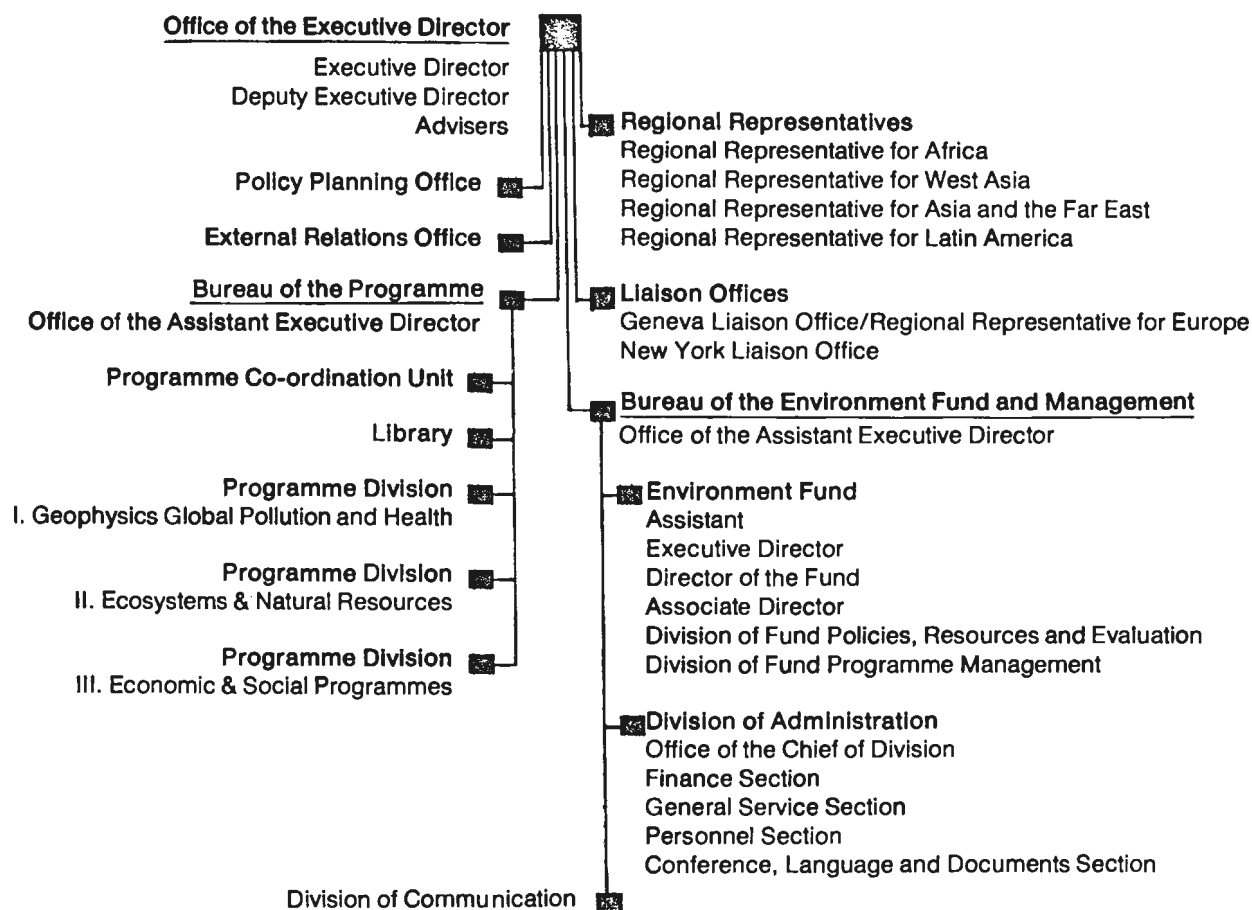
The secretariat

The secretariat of the United Nations Environment Programme serves as a focal point for environmental action and co-ordination within the United Nations system. (An organizational chart showing the various sections of the secretariat appears below.)

The Executive Director, who is nominated by the Secretary-General of the United Nations and elected to his post by the General Assembly, is responsible to the Governing Council for:

- Providing substantive support;
- Co-ordinating environmental programmes within the United Nations system, keeping their implementation under review and assessing their effectiveness;
- Advising intergovernmental bodies of the United Nations system on the formulation and implementation of environmental programmes;
- Securing the co-operation of and contributions from relevant specialized communities from all over the world;
- Providing, upon request, advisory services to promote international co-operation in environmental matters;
- Submitting, on his own initiative or upon request, proposals for medium- and long-range planning for United Nations environmental programmes;
- Bringing attention to any matter he believes needs consideration by the Governing Council;
- Administering the Environment Fund under authority and policy guidance;
- Reporting on environmental matters;
- Performing functions entrusted to the Executive Director.

United Nations Environment Programme. Organizational Chart



UNEP Liaison Offices and Regional Representatives

Liaison Offices

Location	Address	Cables	Telephone	Telex
New York	Mr. Noel Brown Director, UNEP Liaison Office United Nations Headquarters P. O. Box 20 Grand Central Station New York, N.Y. 10017, U.S.A. Office located at: 485 Lexington Avenue	UNATIONS NEW YORK	(212) 754-8139	420544
Geneva	Mr. Peter S. Thacher Director, UNEP Liaison Office Palais des Nations 1211 Geneva 10 Switzerland (mailing address) Office located at: Av. Jean Tremblay, 16 Petit Saconnex, Geneva	UNITERRA GENEVA	342200 985850 Petit Saconnex	28877

Regional Representatives

Location	Address	Cables	Telephone	Telex
Africa	Mr. Michel Dina-Lobe Director of the UNEP Regional Office and Regional Representative for the ECA Region UNEP Headquarters P.O. Box 30552 Nairobi, Kenya Deputy Regional Representative: Mr. Donald Kaniaru	UNITERRA NAIROBI	333930 Ext. 556	22068
Asia and the Far East	Mr. Canaganayan Suriyakumaran Director of the UNEP Regional Office and Regional Repre- sentative for the ESCAP Region United Nations Building, 10th Floor Rajadamnern Avenue Bangkok, Thailand Deputy Regional Representative: Mr. Kumao Kaneko Other telephone lines (for UNEP, ESCAP, UNDP, ILO etc. which are all in the same building): 829161, 829171, 829181, 829191, 829265, 829381	UNITERRA BANGKOK	829615-direct line for Mr. Suriyakumaran Extensions: 1870 Mr. Suriyakumaran 1871 Mr. Kaneko 1872 Mr. Ranjitsin	
Latin America	Mr. Vicente Sanchez Director of the UNEP Regional Office and Regional Repre- sentative for the ECLA Region Edificio Naciones Unidas Presidente Mazaryk 29 Ap. Postal 6-718 Mexico City 5, D.F. Mexico Deputy Regional Representative: Mr. Anastase Diamantidis	CEPAL MEXICO	2501555 Ext. 155	01771055
Middle East*	Mr. Aziz Al-Hamdan Director of the UNEP Regional Office and Regional Repre- sentative for ECWA Region UNDP Representation P.O. Box 814 Manama State of Bahrain	UNDEVPPPO BAHRAIN	8687/8688	
Europe	(see Liaison Office - Geneva)			

*Arrangements have been made for the UNEP sub-regional office in Bahrain to carry out the responsibilities of the Regional Office for West Asia until such responsibilities can be despatched adequately from the Beirut Office.

Annex E

Senior staff of the United Nations Environment Programme secretariat

TOLBA, Mostafa Kamal (Egypt), Executive Director of UNEP.

STEDMAN, R. Bruce (United States of America), UNEP Acting Deputy Director and Assistant Executive Director, Bureau of the Environment Fund and Management.

MUNRO, David (Canada), Special Adviser to the Executive Director with special responsibility for the Programme Bureau, at the Assistant Secretary-General level.

Other senior staff at headquarters, listed alphabetically

AHMAD, Yusuf J. (Bangladesh), Associate Director, Environment Fund and Deputy to the Assistant Executive Director, Bureau of the Fund and Management.

BAUMER, Michel C. (France), Director of Division II (Ecosystems and Natural Resources).

EVTEEV, Sveneld A. (U.S.S.R.), Director of UNEP's Policy Planning Office.

FORAN, J.R. (Canada), Chief, Division of Administration.

MOLLENHAUER, Hans P. (Federal Republic of Germany), Director of the Division I (Geophysics, Global Pollution and Health), Director of International Referral System (IRS).

NDEGWA, Philip (Kenya), Deputy to the Assistant Executive Director of the Bureau of the Programme and Director of Programme Division III (Economic and Social Affairs).

NENEMAN, Wladyslaw (Polish Peoples' Republic), Director of UNEP's External Relations Office.

Senior staff of Regional and Liaison Offices

AL-HAMDAN, Aziz (Kuwait), Regional Representative for the West Asia Region.

BROWN, Noel J. (Jamaica), Senior Liaison Officer in the New York Liaison Office.

DINA-LOBE, Michel (United Republic of Cameroon), Regional Representative for Africa.

SANCHEZ, Vicente (Chile), Regional Representative for the Latin America region.

SURIYAKUMARAN, Canaganayan (Sri Lanka), Regional Representative for the Asia and Pacific Region.

THACHER, Peter S. (United States of America), Director of the Geneva Liaison Office.

Annex F

Habitat: The United Nations Conference on Human Settlements

The concern of United Nations Environment Programme with human settlements stems from the United Nations Conference on the Human Environment, where human settlements and habitat considerations formed an integral part of the agenda and key recommendations were made for strengthening international programmes in this sector, including financing.

The Stockholm Action Plan for the Human Environment



A view of Toa Payoh Housing Estate, one of Singapore's largest satellite towns

states (recommendation 15): "It is recommended that the Secretary-General, in consultation with the appropriate United Nations bodies, formulate programmes on a world-wide basis to assist countries to meet effectively the requirements of growth of human settlements and to improve the quality of life in existing settlements, in particular, in squatter areas".

In its approach, UNEP has always viewed human settlements basically as ecosystems, composed of man-made and natural elements which interact in complex ways with their environment. UNEP has been a fundamental force behind the concern for human settlements since it established a special Preparatory Planning Group in September 1973 to develop a framework for the Habitat Conference, including budget, staff and programme.

The General Assembly of the United Nations, in resolution 3128 (XXVIII), adopted on 13 December 1973, further decided that the United Nations Conference-Exposition on Human Settlements would take place in Vancouver, Canada from May 31 to 11 June 1976.

General Assembly resolution 3128 (XXVIII) also requested the Secretary-General to set up a small conference secretariat, drawing upon the resources of the United Nations system, especially those of UNEP and the

Department of Economic and Social Affairs, and to appoint a Secretary-General who would report through the Executive Director of UNEP.

This series of events formed the background for actions taken by the Governing Council of UNEP at its first three sessions (1973, 1974, 1975), and human settlements have consistently been given high priority in the UNEP work programme.

The Governing Council at its third session, 17 April - 2 May 1975, decided that (decisions 37(III) and 38(III)) UNEP should further support Habitat, and authorized an allocation of Funds for the preparation of films and audio-



Creation of automobile-free shopping malls (above) is Tokyo's way of solving urban congestion

visual presentations of demonstration projects.

UNEP participated in the preparation for Habitat, and continually stressed the strong links between the natural and the man-made environment during the pre-conference meetings.

Because of the high priority given to human settlements at Stockholm, and following decisions of the Governing Council sessions, UNEP is developing practical solutions for the environmentally sound planning and operation of human settlements, with special attention to the problems of developing countries.

The Executive Director has outlined the objectives of UNEP's own human settlements programme as five-fold: to *assist* Governments in formulating national strategies for human settlements which take the environmental factor into account; to *train* those responsible for planning and managing human settlements; to *demonstrate* on a pilot project basis the feasibility of a comprehensive approach to up-grading slums; to *co-ordinate* activities — especially international activities — in the field of human settlements so as to avoid duplication and encourage the transfer of experience; and to *promote* the use of environmentally-sound, low-cost technologies in constructing human settlements.

Annex G

The United Nations Habitat and Human Settlements Foundation

The Stockholm Conference recommended that Governments^a and the Secretary-General of the United Nations take steps towards the establishment of an international fund or financial institution whose primary objective would be to assist in strengthening national programmes relating to human settlements.

The General Assembly in turn considered the report of the Stockholm Conference, endorsed this recommenda-



Made of wooden frames and grass matting, these Somali nomad huts are designed for easy transportation

tion in principle in resolution 2999 (XXVII) of 15 December 1972 and requested the Secretary-General to prepare a report containing recommendations and proposals for its consideration, following consideration by the Governing Council of UNEP and the Economic and Social Council.

The Governing Council at its second session recommended to the General Assembly in decision 16 A (II) of 21 March 1974^b that an institution to be called the International Habitat and Human Settlements Foundation be established as from 1 January 1975. This recommendation was fully endorsed by the Economic and Social Council, at its fifty-seventh session held in Geneva, by resolution 1882 (LVII) of 31 July 1974.

In Resolution 3327 (XXIX) of 16 December 1974, the General Assembly noted the recommendations of the Governing Council of UNEP and the Economic and Social Council and decided that the United Nations Habitat and Human Settlements Foundation be established as from 1 January 1975.

^a United Nations publication, Sales No. E. 73.II.A.14, part one, chap. II, Recommendation 17.

^b Report of the Governing Council on the work of its second session. *Official Records of the General Assembly, Twenty-ninth Session, Supplement No. 25 (A/9625)*, p. 76.

The Executive Director submitted to the Governing Council at its third session the proposed plan and programme of operations for the Foundation (UNEP/GC/36), which the Governing Council endorsed in decision 38 (III) of 24 April 1975^c authorizing the Executive Director to proceed with its implementation.

The General Assembly directed that the primary objective of the Foundation was to assist in strengthening national environmental programmes relating to human settlements, particularly in the developing countries.

The emphasis of the Foundation is on assisting countries to organize and strengthen institutional mechanisms and programmes in order to mobilize higher levels of financial resources for the human settlements sector and to combine these with access to technologies and techniques for facilitating the creation, not just for better housing, but for better environments in which people can live.

Key aspects of the Foundation's mandate can be described briefly as:

Institution-building: The Foundation, in collaboration with the Governments concerned, emphasizes the creation or strengthening of institutions and systems necessary to mobilize domestic resources, as well as external funds, with appropriate investments to be allocated consistent with national and local objectives. Proposals for both urban and rural settlements are considered, with emphasis on channeling resources to meet the needs of lower income groups;

Provision of seed capital: A principal use of seed capital provided by the Foundation is to help establish or support institutions or programmes for the mobilization of resources for investment and action in the field of habitat and human settlements;

Financing strategies and housing finance policies: Emphasis in this area is on building institutions within the context of an effective national housing policy framework, in which project strategies can be economically and socially justified;

Pre-investment and project preparation: A total and effective settlements programme may give rise to a need for assistance by the Foundation in the pre-investment and project preparation phases of human settlements investment, and the Foundation is ready to perform this function if necessary;

Intermediary services: The Foundation offers its services as an intermediary in helping developing countries to identify and obtain assistance from other sources, and this need involves assistance in putting together combinations of technical and financial resources from a number of sources, and provision of information on donor programmes priorities, criteria, and resources and on available advisory services in the field.

The structure of the Foundation was decided by the

General Assembly in resolution 3327 (XXIX) when it requested that the Governing Council of UNEP should be the governing body of the United Nations Habitat and Human Settlements Foundation, and that the Executive Director of the Programme should be responsible for the administration of the Foundation.

The Governing Council decided in April 1975 that, under the authority of the Executive Director, the Foundation will be managed by an Administrator to whom the Executive Director will assign the primary responsibility for the operations and management of the Foundation. The establishment of the Foundation was effected as rapidly as possible. The Foundation has an Advisory Board whose members, chosen on a broad geographical and institutional basis, have been appointed by the Executive Director. The purpose of the Board is to advise the Executive Director and the Administrator on the policy, operations and support of the Foundation.

Requests from Governments for assistance by the Foundation are normally forwarded to it through the offices of the resident representatives of the United Nations Development Programme in each country. Although proposals may be initiated by either public or private institutions concerned with the Foundation's field of action, requests for assistance can only be made by Governments. Should a Government wish to develop private institutions through the assistance of the Foundation, the Foundation is prepared to consider extending such assistance.

^c Report of the Governing Council on the work of its third session, *Official Records of the General Assembly, Thirtieth Session, Supplement No. 25 (A/10025)*, p. 104.

Annex H

The United Nations Conference on Desertification

The plight of millions affected by the Sahelian drought (1968-1974) led the General Assembly, at its twenty-ninth session, to adopt resolution 3337(XXIX) of 17 December 1974, designed to initiate action to combat desertification. As a result, the United Nations Conference on Desertification is to be held from 29 August to 9 September 1977, with the aim of giving political impetus to an internationally-conceived programme.



Starving cattle roam for food in the parched W. African countryside

Objectives of the Desertification Conference are to give Governments and others concerned a more profound understanding of the process of desertification, to suggest ways in which this process can be delayed, arrested and reversed, and to prepare a global plan of action.

For the purpose of the Conference, deserts are seen as areas of sparse or absent vegetation. Desertification is regarded as the spread or intensification of such conditions. The Conference is concentrating on the hot, dry deserts.

A small secretariat under the leadership of the Executive Director of UNEP has been set up. The United Nations Secretary-General has the ultimate responsibility for the Conference, while the Executive Director of UNEP is immediately responsible for reporting progress on the work of the secretariat. An *ad hoc* interagency task force assists the secretariat, and a panel of senior consultants who represent the global scientific community advises on substantive aspects of the secretariat.

In its capacity as the intergovernmental preparatory body for the Conference, the Governing Council at its fourth session approved the Executive Director's report on the Conference, with an allocation of \$2,023,500 towards

the preparations for the Conference in 1976-77, and requested the Executive Director to report on progress to the Governing Council at its fifth session in May 1977.

Annex I

World Environment Day — 5 June 1975

In commemoration of the opening of the Stockholm Conference, the General Assembly of the United Nations, in resolution 2994(XXVII) of 15 December 1972, declared 5 June each year to be World Environment Day. Each year on that day Governments, non-governmental organizations, information media and individual citizens throughout the world organize events and activities to create public awareness of environmental issues.

The underlying theme for World Environment Day is "Global Interdependence in the Care and Use of the Earth's Resources". In anticipation of the United Nations Conference on Human Settlements, the theme for World Environment Day 1975 was "Human Settlements, our man-made environment".

More than 80 countries marked this day with special activities such as messages from Heads of State, wide press, television and radio coverage, clean-up campaigns and conservation demonstrations by citizen-action groups.

In Kenya, Mr. Maurice Strong, then the United Nations Environment Programme's Executive Director, flew to Nakuru in the Rift Valley to address more than 10,000 people. Earlier that day, Mr. Strong was interviewed "live" by Radio Australia through a hookup with the Voice of Kenya broadcasting network in Nairobi.

Other celebrations and meetings were held and proclamations issued in many parts of the world. At United Nations Headquarters, New York, the Secretary-General warned that man's habitat posed a host of crucial issues to the future of the world and called attention to the forthcoming human settlements Habitat conference. Mr. Enrique Penalosa, Secretary-General of Habitat, outlined concerns caused by demands for goods and services, which would double in a single generation. Many of the world's cities already fail to respond to human needs today, but demographers and planners predict the existence of future urban conurbations of 20, 30 or even 40 million inhabitants.

The following are a few examples of how World Environment Day 1975 was observed around the world.

In Australia plans to transform the unique Great Barrier Reef into a marine park were brought before the Australian Parliament. The reef, one of the great natural wonders of the world, draws thousands of visitors each year. In Brazil, a group called the Group for Biological Regeneration of the Universal Order promoted an entire week dedicated to preservation of the human environment. The cause opened its drive at the Brazilian Press Association in Rio de Janeiro, in close co-operation with the United Nations Information Centre in Rio. In Canada, the host country for the Habitat Conference, the Minister of Environment made a special reference to the day and to the unique importance of the approaching Conference in a special address to the Earthcare Conference in New York sponsored by the

Sierra Club and the Audubon Society. In the German Democratic Republic the Government emphasized its co-operation with the United Nations particularly in the areas of water and air pollution and in a special campaign to clean up its villages. In Ghana, a TV panel discussion took place with Professor Ernest Boateng, Executive Chairman of the Environment Protection Council; this was supported by special supplements in the newspapers and by radio programmes. The Government also launched a national clean-up campaign which was supported by environmental exhibitions. In India, All India Radio broadcast a special TV documentary which highlighted the pollution problems found in cities and also interviewed Dr. B.D. Chaudhury, Chairman of the National Committee on Environmental Planning and Co-ordination. The influential *Times of India* in an editorial described the UNEP Media Pack as a "brave attempt to tell the world that unless its ways were mended doomsday would soon be at hand". In Iran, extensive activities marked the day with massive coverage in the press and on radio and television with messages from His Imperial Majesty, Shahanshah Aryameh and H.E. the Prime Minister. Painting, writing and photographic competitions on the environment were held in schools throughout the country. In Japan, the country repeated its "No Car Day", where Cabinet Ministers, Government officials and millions of private citizens left their cars at home and walked to work, rode buses or took the subway instead. A slogan contest, special reports in the press, radio and television and lectures and film meetings for school children were other highlights of a week-long environment campaign that also included a pollution survey.

In Norway, experts from industry, universities and Government agencies all took part in a seminar on 5 June to discuss energy problems within the perspective of resources and the environment and to consider the question: "Why should the growth in energy consumption be reduced?" In Panama, the Minister of Health addressed the entire nation on radio and television about World Environment Day, and special emphasis on environmental issues was introduced into schoolroom curricula following instructions from the Minister of Education. In the United States of America both the Sierra Club and the Audubon Society organized the Earthcare fourteenth biennial wilderness conference to coincide with World Environment Day. President Gerald Ford spoke of "the danger to our planet which environmental degradation poses", and an estimated 17 million citizens saw the UNEP World Environment Day film spots on American television networks.

Annex J

Non-governmental Organizations Environment Liaison Centre

The Environment Liaison Centre has been established in Nairobi under the auspices of the Environment Liaison Board to develop communication and action concerning the environment among non-governmental organizations and to maintain close contact with UNEP. The Centre monitors UNEP meetings, documents and programme

activities and prepares briefs to foster greater understanding of the issues before UNEP.

With UNEP support, the Centre is conducting a global survey of the environmental activities of non-governmental organizations and of their potential in participating in the United Nations Environment Programme and with each other.

During 1975, the Centre prepared materials on energy, whales, low cost technology and other matters of environmental significance which have been utilized by non-governmental organizations and UNEP.

A bauxite plant in operation near Spalding, Jamaica



The Centre assisted in the creation of a Youth Working Party on the Environment as part of a joint UNESCO/UNEP environmental education project.

Address: The Environment Liaison Centre, P.O. Box 72461, Nairobi, Kenya. (Tel. 24770)

Annex K

International Centre for Industry and the Environment

The International Centre for Industry and the Environment (ICIE) with offices in Nairobi and Paris, has been established under the auspices of the International Chamber of Commerce by a group of national and international organizations representing industrial interests. Its principal objective is to provide the means through which its member organizations can participate constructively in international work aimed at protecting and improving the human environment.

During 1975, UNEP worked closely with the centre; the Executive Director was the keynote speaker at its Annual General Meeting in London. On that occasion, discussions took place on the co-operation between UNEP and

industry in determining the risk of possible damage to the ozone layer round the earth.

ICIE has also co-operated with UNEP in establishing its industry seminar programme, which is described at length in the first part of this annual review.

Address: The International Centre for Industry and the Environment; 39 Cours Albert 1er, 75008 Paris, France, and P.O. Box 30225, Nairobi, Kenya.

A view of the temporary offices occupied by the United Nations Environment Programme (UNEP) at Gigiri, on the outskirts of the Kenyan capital, Nairobi. The eight identical office blocks were built at a cost of \$2 million in the record time of 5½



Earlier in the year, Miss Helena Z. Benitez, of the Philippines, President of the Third Session Governing Council of UNEP, helped dedicate the new grounds for the site of UNEP headquarters by planting a tree at the invitation of the Kenya Government.

months. Locally-based architects, engineers and contractors were responsible for the design and construction. A feature of the decor is a series of African wildlife murals which identify the respective buildings.



Annex L

New temporary headquarters established at Gigiri, Nairobi

On 1 July 1975, construction began on the site donated by the Government of Kenya for the new, temporary headquarters for the United Nations Environment Programme. The temporary headquarters complex, which it is expected will in due course be replaced by permanent buildings, consists of eight office blocks, a commissary and service buildings. These buildings occupy thirteen and a half acres of landscaped ground in the northeast suburbs of Nairobi, Kenya, six kilometres from the city. The complex contains 125,000 square feet of office space, on a two storey plan with working space for between four and five hundred persons. All construction work was awarded to local Nairobi contractors, at an estimated total cost of slightly more than fifteen million Kenya shillings.

By December, the headquarters buildings were ready for the office facilities to be moved to that site from town centre headquarters at the Kenyatta Conference Centre complex. With the co-operation of UNEP staff and construction workers, the move was successfully completed within a few days.

References

¹This chapter is based on the text of a report (UNEP/GC/58) submitted by the Executive Director to the Governing Council of UNEP at its fourth session, 30 March - 14 April 1976.

²See, for example, D.C. Rao, "Urban target groups", in *Redistribution with Growth*, Edward H. Chenery et al., ed. (Oxford University Press, 1974); A. Berry, *Unemployment as a social problem in urban Colombia*, Economic Growth Discussion Paper No. 145, (New Haven, Yale University Press); D. Mazumdar, *The problem of unemployment in peninsular Malaysia* (Mimeo, 1974, Washington, D.C.).

³C. Norman, "After the Third World War", *Nature*, Vol. 257 9 October 1975, p. 439.

⁴*SIPRI Yearbook of World Armaments and Disarmaments 1968/69*, p. 19, cited in *World Facts and Trends*, John McHale, ed. (MacMillan, 1972) p. 88.

⁵R. Arvill, *Man and Environment* (Penguin, United Kingdom, 1974) p. 17.

⁶See, for example, J. Bribbin, "Climate and the world's food", *New Scientist*, Vol. 64, 28 November 1974; p.643: P. Collins, "Facing the Facts about Food", *Nature*, Vol. 256, 10 July 1975, p.85.

⁷R. Arvill, *op. cit.* p. 207.

⁸UNEP/GC/30, Chap. IV. B; R. Arvill, *op. cit.*, pp. 30-33.

⁹J.A. Gulland, in *Antarctic Ecology*, M.W. Holdgate, ed. (Academic Press, 1970).

¹⁰*WHO Statement on Modification on ozone layer due to human activities and some possible geophysical consequences; WMO/R/STW/2, Annex.*

¹¹*Trends and Prospects in Urban and Rural Population, 1950 - 2000.* United Nations Population Division, New York.

¹²*Provisional City Projections, 1950-2000.* United Nations Population Division, New York, February 1975.

¹³*Urban Slums and Squatter Settlements in the Third World.* A/CONF.70/RPC.9

¹⁴*WHO's Human Health and Environment Programme.* EB57/23, 4 December 1975.

¹⁵R. Arvill, *op. cit.*, pp. 30-33.

¹⁶*Royal Commission on Environmental Pollution: First, Third and Fourth Reports.* (Her Majesty's Stationery Office, London).

¹⁷*United Nations Environment Programme, Internal Reports on Second China Tour on Schistosomiasis Control, 1975.*

¹⁸*Fifth Annual Report of the Council on Environmental Quality* (US Government Printing Office, 1974). p. 455.

¹⁹E.K. Fedorov, *Interrelation between man and environment* (in Russian) (Gidrometeoizdat, 1973).

²⁰*Council on Environmental Quality. Reports.*

²¹*World national parks, progress and opportunities*, R. van Osten, ed. (Hayex, 1972).

²²R. Allen, "Marine Parks", *New Scientist*, Vol. 67, 14 August 1975.

²³See *New Scientist*, 7 August 1975, pp. 332-4.

²⁴Algeria, Argentina, Australia, Austria, Benin, Brazil, Bulgaria, Byelorussian, Soviet Socialist Republic, Canada, Central African Republic, Chile, China, Colombia, Czechoslovakia, Denmark, Egypt, Finland, Gabon, Ger-

man Democratic Republic, Germany (Federal Republic of), Ghana, Honduras, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Ivory Coast, Jamaica, Japan, Jordan, Kenya, Korea (Democratic People's Republic of), Kuwait, Liechtenstein, Luxembourg, Malaysia, Malta, Mauritius, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Norway, Peru, Philippines, Poland, Portugal, Romania, Senegal, Singapore, South Africa, Spain, Sudan, Sweden, Switzerland, Ukrainian Soviet Socialist Republic, Union of Soviet Socialist Republics, United Kingdom, United States of America, Upper Volta, Uruguay, Yugoslavia, Zaire.

²⁵Bahrain, Bangladesh, Botswana, Cyprus, Democratic Yemen, Ethiopia, Greece, Iraq, Malawi, Maldives, Mongolia, Nicaragua, Niger, Pakistan, Panama, Qatar, Rwanda, Sri Lanka, Swaziland, Syrian Arab Republic, Trinidad and Tobago, Turkey, United Republic of Cameroon, United Republic of Tanzania, Zambia.

²⁶Brazil, France, Mexico.

²⁷Of the documents presented to the first four sessions of the Governing Council of UNEP, *the following are most relevant to this summary:*

General — The report of the United Nations Conference on the Human Environment (United Nations publication, Sales No. E.73.II.A.14) and those of the first three sessions of the Governing Council (*Official Records of the General Assembly, Twenty-eighth, Twenty-ninth and Thirtieth Sessions, Supplement No. 25* (A/9025, A/9625 and A/10025) respectively).

Problems addressed

- UNEP/GC/14/Add. 1: Review of the environmental situation and of activities relating to the environment programme (second session)
- UNEP/GC/30: Review of the environmental situation and of activities relating to the environment programme (third session).

Objectives, strategy

- UNEP/GC/5: Action Plan for the Human Environment — programme development and priorities (first session)
- UNEP/GC/14/Add.2: The environment programme — approval of activities within the environment programme, in the light, *inter alia* of their implications for the Fund programme (second session)
- UNEP/GC/31: The proposed programme (third session)
- UNEP/GC/61: Review of the status of the programme (fourth session).

Output (In so far as this is a result of Fund programme involvement)

- UNEP/GC/8: Review and approval of the Fund programme for 1973-1974 (first session)
- UNEP/GC/17/Rev. 1: Review and approval of the Fund programme 1974-1975 (second session)
- UNEP/GC/23: Report on the implementation of the Fund programme in 1973 (second session)
- UNEP/GC/32: Proposed Fund programme activities (revised 1975, proposed 1976-1977) (third session)
- UNEP/GC/40: Report on the implementation of the

Fund programme in 1974 (third session)

- UNEP/GC/62: Proposed Fund programme activities, 1976-1977 (fourth session)
- UNEP/GC/68: Report on the implementation of the Fund programme in 1975 (fourth session).

²⁸The use of the term "Persian Gulf" to describe the gulf geographically situated between Iran and the Arabian Peninsula is based on conventional practice. It should be noted, however, that some delegations use the term "Arabian Gulf".

²⁹Distribution of projects in relation to the objectives of the Environment Programme for the period 1973-1975; see p. 26.

³⁰Estimates of Resources for 1973-1977; see p. 25.

³¹Projects approved from third session of Governing Council to 31 December 1975; see p. 27.

³²UNEP/GC/L.36.

³³Institutional distribution of projects approved 1973-1975; see p. 38.

³⁴Geographical distribution of projects 1973-1975; see p. 39.





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