

2nd ENVIRONMENTAL PERFORMANCE **REVIEW**



AZERBAIJAN



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Foreword

Environmental Performance Reviews (EPRs) for countries with economies in transition were initiated by Environment Ministers at the second Environment for Europe Ministerial Conference, held in Lucerne, Switzerland, in 1993. Subsequently, the United Nations Economic Commission for Europe (UNECE) Committee on Environmental Policy decided to make the EPRs part of its regular programme. The first cycle of reviews that began in 1994 covered 23 countries from the UNECE region and was carried out until 2004.

At the fifth Environment for Europe Ministerial Conference (Kiev, 2003), the Ministers affirmed their support for the EPR Programme, in particular as an important instrument for countries with economies in transition, and decided that the Programme should continue with a second cycle of reviews. This support was reconfirmed at the sixth Environment for Europe Ministerial Conference (Belgrade, 2007). This second cycle, while assessing the progress made since the first review process, puts particular emphasis on implementation, integration, financing and the socio-economic interface with the environment.

Through the peer review process, EPRs also promote dialogue among UNECE member States and the harmonization of environmental conditions and policies throughout the region. As a voluntary exercise, EPRs are undertaken only at the request of the countries concerned.

The studies are carried out by international teams of experts from the UNECE region, working closely with national experts from the reviewed country. The teams also benefit from close cooperation with other organizations in the United Nations system, for instance the United Nations Development Programme, as well as with the Organisation for Economic Co-operation and Development and other organizations.

This is the second EPR of Azerbaijan to be published by UNECE. The review takes stock of the progress made by Azerbaijan in the management of its environment since the country was first reviewed in 2003. It assesses the implementation of the recommendations contained in the first review (Annex I-B). This second EPR also covers nine issues of importance to Azerbaijan related to policymaking, planning and implementation, the financing of environmental policies and projects, and the integration of environmental concerns into economic sectors, in particular the sustainable management and protection of water resources and the protection of the Caspian Sea, waste management, air management, and forestry, biodiversity and protected areas.

I hope that this second EPR will be useful in supporting policymakers and representatives of civil society in their efforts to improve environmental management and to further promote sustainable development in Azerbaijan, and that the lessons learned from the peer review process will also benefit other countries of the UNECE region.



Ján Kubiš
Executive Secretary
Economic Commission for Europe

Preface

The second Environmental Performance Review (EPR) of Azerbaijan began in November 2009 with a preparatory mission. During this mission, the final structure of the report was discussed and established. A review mission took place from 11 to 22 April 2010. The team of international experts taking part included experts from the Czech Republic, Kazakhstan, Portugal, the Slovak Republic, and Switzerland as well as from the secretariats of the United Nations Environment Programme (UNEP) and the United Nations Economic Commission for Europe (UNECE).

The draft EPR report was submitted to Azerbaijan for comment and to the Expert Group on Environmental Performance for consideration in September 2010. During its meeting on 28 October 2010, the Expert Group discussed the report in detail with expert representatives of the Government of Azerbaijan, focusing in particular on the conclusions and recommendations made by the international experts. The Expert Group decided to address those recommendations of the first EPR of Azerbaijan that were still valid in two different ways. If a chapter from the first EPR was also covered in the second EPR, then valid recommendations and their conclusions from the former would be reflected at the end of the respective chapter in the latter. If a first EPR chapter however was not covered in the second EPR, valid recommendations would be mentioned in Annex I-A “Valid Recommendations from the first Environmental Performance Review not covered in preceding chapters”. The remaining first EPR recommendations that had been implemented partially or fully would be covered in Annex I-B “Implementation of the recommendations of the first Environmental Performance Review”.

The EPR recommendations, with suggested amendments from the Expert Group, were then submitted for peer review to the Committee on Environmental Policy on 2 November 2010. A high-level delegation from Azerbaijan participated in the peer review. The Committee adopted the recommendations as set out in this report.

The Committee on Environmental Policy and the UNECE review team would like to thank the Government of Azerbaijan and its experts who worked with the international experts and contributed their knowledge and assistance. UNECE wishes the Government of Azerbaijan further success in carrying out the tasks involved in meeting its environmental objectives, including the implementation of the recommendations contained in this second review.

UNECE would also like to express its deep appreciation to the Governments of the Netherlands, Norway and Switzerland for their financial contributions; to the Governments of Portugal and Switzerland for having delegated their experts for the review; to UNEP and the United Nations Development Programme for their support of the EPR Programme and this review.



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Mrs. Nona Iliukhina contributed and was involved in drafting some parts of the report.

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LIST OF ABBREVIATIONS

ACG	Azeri-Chirag-Gunashli
ADB	Asian Development Bank
AP	Action plan
BAT	Best available technique
BOD	Biological oxygen demand
BTC	Baku-Tbilisi-Ceyhan
CAPIES	Comprehensive Action Plan for Improving the Environmental Situation
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CEP	Caspian Environment Programme
CEPA	Classification of Environment Protection Activities
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLRTAP	Convention on Long-range Transboundary Air Pollution
COD	Chemical oxygen demand
COFOG	Classification of the Functions of Government
CPI	Consumer price index
DDT	Dichlorodiphenyltrichloroethane
DEP	Department for Environment Protection
DNA	Designated National Authority
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EIA	Energy Information Agency
EIA	Environmental impact assessment
EITI	Extractive Industries Transparency Initiative
EMEP	Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe
EMS	Environmental management system
ENPI	European Neighbourhood and Partnership Instrument
EPR	Environmental performance review
ESD	Education for sustainable development
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign direct investment
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse gas
HCFCs	Hydrochlorofluorocarbons
HDI	Human Development Index
HFA	Hyogo Framework for Action
HMs	Heavy Metals
Hydromet	National Hydrometeorological Department
ICZM	Integrated Coastal Zone Management
IFIs	International financing institutions
IMF	International Monetary Fund
IPPC	Integrated pollution prevention and control
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
ITS	Intelligent Transport System
IUCN	International Union for Conservation of Nature
IWRM	Integrated water resources management
JSCAWE	Joint Stock Company Amelioration and Water Economy
LEAP	Local Environmental Action Plan

MAC	Maximum allowable concentration
MAD	Maximum allowable discharges
MARPOL	International Convention for the Prevention of Pollution from Ships
MDG	Millennium Development Goal
MEAs	Multilateral environmental agreements
MED	Ministry of Economic Development
MENR	Ministry of Ecology and Natural Resources
MOU	Memorandum of Understanding
MSW	Municipal solid waste
MTEF	Medium-term expenditure framework
NCAP	National Caspian Action Plan
NDEM	National Department of Environmental Monitoring
NDP	National Policy Dialogue
NEAP	National Environmental Action Plan
NEHAP	National Environmental Health Action Plan
NGO	Non-governmental organization
NPESSD	National Programme on Environmentally Sustainable Socio-economic Development
ODA	Official development assistance
ODS	Ozone-depleting substance
OECD	Organisation for Economic Co-operation and Development
OSCE	Organization for Security and Cooperation in Europe
PA	Protected area
PCB	Polychlorinated biphenyl
POC	Permanent organic component
POP	Persistent Organic Pollutants
PPP	Purchasing Power Parity
PSA	Production Sharing Agreements
PRTR	Pollution release and transfer register
SAP	Strategic Action Programme
SAWMA	State Amelioration and Water Management Agency
SCAP	Strategic Convention Action Programme
SEA	Strategic environmental assessment
SIP	State Investment Programme
SOCAR	State Oil Company of the Azerbaijan Republic
SOFAZ	State Oil Fund of Azerbaijan
SPPRS	State programmes for Poverty Reduction and Sustainable Development
TACIS	Technical Assistance to the Commonwealth of Independent States
TDA	Transboundary Diagnostic Analysis
TSP	Total suspended particulates
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VOC	Volatile organic compound
WB	World Bank
WHO	World Health Organization
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature
WWTP	Wastewater treatment plant

SIGNS AND MEASURES

..	not available
-	nil or negligible
.	decimal point
°C	degree Celcius
\$	dollar
Ci	Curie
GWh	gigawatt-hour
ha	hectare
kg	kilogram
kJ	kilojoule
km	kilometre
km ²	square kilometre
km ³	cubic kilometre
kgoe	kilogram of oil equivalent
ktoe	kiloton of oil equivalent
kV	kilovolt
kW	kilowatt
kWh	kilowatt-hour
l	litre
m	metre
m ²	square metre
m ³	cubic metre
MW	megawatt
PJ	petajoule
ppm	parts per million
s	second
t	ton
TJ	Terajoule
toe	ton of oil equivalent
tofe	ton of fuel equivalent
TWh	terawatt-hour

CURRENCY CONVERSION TABLE

Exchange rates (period average) Monetary unit: Manat

Year	Manat/US\$
2000	0.895
2001	0.931
2002	0.972
2003	0.982
2004	0.983
2005	0.945
2006	0.893
2007	0.858
2008	0.822
2009	0.804

Sources: UNECE common database and CIA Factbook, August 2010.

EXECUTIVE SUMMARY

The first Environmental Performance Review (EPR) of Azerbaijan was carried out in 2003. This second review intends to measure the progress made by Azerbaijan in managing its environment since the first EPR, and in addressing upcoming environmental challenges.

Azerbaijan is one of the oldest oil-producing countries in the world. Oil production peaked at some 500,000 barrels per day (bbl/day) during the Second World War but fell significantly after the 1950s. Between 1997 and 2008, Azerbaijan's oil production increased almost fivefold. In 2008, the country was producing 875,000 bbl/day, some 85 per cent of which was exported. It was expected that peak oil capacity in 2009 would be pushed over the 1 million bbl/day mark.

With its strategically important pipeline infrastructure, Azerbaijan is becoming an increasingly important transit corridor for oil and gas. Pipelines play a crucial role in the economic development of the country, which offers three important transit pipeline routes through its territory.

Since 1991, Azerbaijan's economy suffered from serious problems, but it recovered considerably by 2009. Gross domestic product (GDP) dropped by 63 per cent between 1989 and 1995. Economic recovery was very slow, and GDP only returned to its pre-1989 level in 2005. However, since 2005, GDP growth has been extremely strong and by 2009 had doubled its 1995 level.

Since the 1990s, output expansion has been largely driven by the foreign direct investment (FDI) in the oil and gas sector that has resulted in a two-track economy: a fast-growing international hydrocarbon sector in contrast with a non-oil-related, inefficient internal economy sector. In 2007, the oil and gas sector represented 70 per cent of industrial output and the hydrocarbon sector brought in over 90 per cent of export revenue. Industrial production contributes over 60 per cent of GDP (2008), double the 1995 figure.

Rapid industrialization has led to a decline in the importance of the agricultural sector, which now produces only 6 per cent of GDP, compared with 30 per cent in 1991, and which has now fallen below the construction sector (8 per cent of GDP). However, in 2007 the private sector produced some 81 per cent of GDP as a result of consistent privatization policy started in 1993.

Policymaking framework for environmental protection and sustainable development

Environmental authorities have been considerably strengthened since the first EPR, both institutionally and in terms of funding. Since its establishment in 2001, the Ministry of Ecology and Natural Resources (MENR) has succeeded in promoting sectoral integration by developing environmental programmes and action plans, and by contributing to the development of programmes on sustainable development in cooperation with other ministries and State agencies. However, strengthening institutional coordination and cooperation among ministries, linked to the environment, remains a key challenge.

Core policy documents relating to the environment were either about to expire or had expired, without a clear plan or timetable that would ensure their continuity. Specifically, there was no evidence that the 2003–2010 State Programme on Environmentally Sustainable Socio-Economic Development was about to be extended or updated. The draft Additional Action Plan cannot replace a coherent policy programme. Long-term improvements in environmental management and protection require sound development of a policy framework that can establish continuity and predictability in national environmental policy.

Significant progress has been made in developing a national legislative framework. There is, however, considerable room for improvement, especially with regard to secondary legislation, which is at times non-existent or not readily accessible and available.

Integrating environmental concerns into economic and social sectors remains a key objective for guaranteeing sustainable development, public health and social well-being, which by its nature requires inter-sectoral and inter-ministerial cooperation. The existing ministerial coordination cannot adequately ensure that environmental and sustainable development considerations receive the required priority.

Compliance and enforcement mechanisms

Since 2003, the provisions of the environmental legislation on monitoring of compliance have not changed significantly. However, current legislation provides only detailed regulations for State monitoring of compliance and enforcement by the competent authorities. The provisions of the Law on Environmental Protection on self-monitoring by industrial operators and public enforcement are very short and are not developed in the secondary legislation.

The environmental enforcement system relies almost solely on a set of administrative sanctions limited to monetary administrative penalties. The need to review the system of administrative sanctions for non-compliance is illustrated by the high number of appeals against decisions and by the imbalance between fines and compensation in the period 2008 to 2009. The aim of such a review would be to make the system more consistent, proportionate and effective.

As highlighted by the first EPR, there is still no unified environmental enforcement strategy. Some short-term priorities in this area are set via ad hoc decisions by the President and Cabinet of Ministers, followed by certain interventions by environmental enforcement authorities and, in some cases, by urgent investments out of the President's Reserve Fund. Such an approach precludes the design of a more effective environmental enforcement system with a set of key measures. Moreover, it hinders the formulation of a strategic view towards the planning and management of the activity of MENR inspectors, including the evaluation of resource requirements for staffing and infrastructure and capacity-building needs.

The legislative frameworks for State ecological expertise and environmental impact assessment (EIA) have not changed in comparison with 2002. National legislation lacks specific provisions on EIAs, as well as clear criteria for determining whether or not a project is subject to State ecological expertise and an EIA. Moreover, decision-making processes concerning such expertise and EIAs are extremely centralized, while the administration dealing with those issues is understaffed. All these factors impede promotion of EIAs in the country. Strategic environmental assessments (SEAs) are also sometimes carried out, but national legislation does not contain any specific regulations in this context.

A significant share of the basic information derived from monitoring, inspections and enforcement is not available to the public. Moreover, the statistical reports submitted by MENR to the State Statistical Committee do not cover data on inspections and enforcement of the legislative requirements relating to conservation of biodiversity and specially protected natural areas.

Monitoring, information, public participation and education

Azerbaijan has generally preserved its monitoring networks and made some progress in developing them further. However, no change in the number of measured air and water parameters has taken place since 2003. Hydrobiological observations for surface water and groundwater are not implemented. Sampling and analytical methods follow requirements set out in the 1989 and 1995 guidebooks, which have never been reviewed. There is a need to strengthen environmental monitoring to make it an effective information and policy tool.

There are no institutional structures or formal arrangements to coordinate monitoring and environmental data-collection activities conducted by various institutions. Intercalibration exercises between analytical laboratories of various monitoring institutions are sporadic or non-existent. Furthermore, enterprise environmental monitoring remains practically non-existent in the country.

Public institutions responsible for environmental monitoring and data collection maintain their own databases, which are not interconnected with each other. Although MENR regularly receives environmental statistical data from other monitoring institutions and enterprises, there is no user-friendly operational database to link various data flows to facilitate study of cause-effect relationships and to develop environmental assessments.

Azerbaijan does not publish state-of-the-environment reports, contrary to the country's obligations under the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. MENR has not established a legal and institutional framework for producing regular environmental assessment reports.

However, Azerbaijan is making efforts to ensure that environmental information is accessible to the public. Thus, MENR and the Ministry of Health regularly update their websites, produce information leaflets and posters for the public and issue press releases. At the same time, the Ministries of Economic Development, of Industry and Energy, of Agriculture and of Transport do not actively communicate environment-related data and information to the public. National reports to the governing bodies of MEAs are not uploaded on national websites and are thus not available to the public.

Azerbaijan has made some progress in involving the public in environmental decision-making. The public was widely consulted in preparing some governmental programmes such as the State Programme for Poverty Eradication, and is also invited to participate in working groups preparing draft laws. In addition, representatives of research institutions and non-governmental organizations participate in State ecological expertise expert commissions and public hearings are conducted on large projects subject to the EIA procedure. However, no clear procedures have been developed for holding public hearings on environmental matters.

Environmental education and training have improved but much remains to be done. Environmental issues have been introduced into preschool and school curricula, and a number of relevant subjects have been included in higher education courses. An educational standard for the subject of ecology has been approved. Training and retraining courses are organized on a regular basis for civil servants. However, existing curricula and teaching aids do not comply with the current requirements.

No national strategy on education for sustainable development has been adopted so far. No inter-agency commission or expert group involving all stakeholders has been established to develop and promote the subsequent implementation of a national strategy.

Implementation of international agreements and commitments

Azerbaijan has made significant progress on international environmental cooperation since 2003. Azerbaijan has acceded to or ratified 14 major MEAs and the number of international environmental conventions and protocols, as well as bilateral agreements, ratified by Azerbaijan is growing steadily.

Substantial progress has been made in implementing international commitments under some MEAs, but for other agreements measures taken are mostly on an ad hoc basis and often lack strategic planning. Further improvement is needed for reliable communication with MEA secretariats and in compliance with reporting obligations.

Azerbaijan is a party to a relatively high and still growing number of Conventions in the area of biodiversity conservation. National authorities have to place special attention on coordinating activities for the implementation of these agreements and on effective use of synergies in their work.

Azerbaijan participates in the Clean Development Mechanism (CDM) as a non-Annex 1 party to the Kyoto Protocol. The country can take advantage of the benefits of the flexible mechanisms under the Kyoto Protocol.

As the country's CO₂ efficiency is still low, cost-effective reduction of greenhouse gas emissions is possible through CDM. Simplified modalities and procedures for small-scale CDM project activities would reduce the administrative burden.

In its efforts to implement international commitments regarding climate change, the Government has adopted a number of programmes, which include activities to identify suitable renewable energy sources, measures on climate change mitigation and actions for improved climate monitoring; but so far neither a comprehensive mitigation nor an adaptation strategy has been worked out.

Land degradation continues to be a major environmental problem that has worsened in recent years. Conflicts of interest and coordination problems between MENR and the Ministry of Agriculture impede the successful implementation of the necessary measures to stop land degradation and its negative impact on long-term food security.

Azerbaijan has not yet fulfilled an important obligation on setting targets on the quality of drinking water and related issues to comply with the provisions of the Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes. National and local targets will help Azerbaijan to achieve the goal of providing drinking water and sanitation for all, as set by the above-mentioned Protocol and the targets of Millennium Development Goal 7.

Economic instruments and environmental expenditures for environmental protection

Progress has taken place in the use of economic instruments for environmental protection in the period since the first EPR. Tariffs in the energy sector have become more cost reflective and collection rates have created better conditions for efficiency and improved incentives for better environmental management. In the utilities sector, there has been progress overall in charging users for the effective use of resources, including through progress in metrification and tariff changes. However, collection rates in utilities are still unsatisfactory and there is no independent tariff-setting process.

The system of pollution charges remains unreformed and largely ineffective as a policy instrument. The shortcomings regarding lack of focus and limited influence in changing the behaviour of polluters, pointed out during the first EPR, remain valid. As rates have not been updated, the dissuasive value of the charges has been further eroded by inflation. Nevertheless, some progress has been noted with regard to payment compliance.

Environmental spending has increased significantly in recent years, with expansion driven by investment. In 2008, the amount of environmental expenditures was US\$ 213.73 million, almost 10 times the level reached in 2003. As a result of the strong investment effort undertaken in 2007–2008, environmental investment accounted for some 55 per cent of environmental spending in that period.

Public spending has played a major role in the overall growth of environmental spending. The development of the hydrocarbon sector and the massive investment effort led to the rapid economic growth and the strengthening of public finance, thus creating new opportunities for financing public projects, including in the environmental domain. However, there is insufficient clarity on concrete commitments over the medium term.

Air management and permit issuing

Until 2009, air quality was not a priority of environmental policy in Azerbaijan. However, several measures were recently implemented or planned to reduce emissions of pollutants into the air. Highly polluting industrial installations in Baku will be closed down and replaced by newly built ones located in sparsely populated sites.

Between 2003 and 2009, a declining trend for emissions from stationary sources was observed, whereas emissions from mobile sources increased by almost 64 per cent, which can be explained by the development of the vehicle fleet. In 2008, the emissions from mobile sources were twice as high as those from stationary sources. At an aggregate level, however, because of these opposing trends, there is no significant tendency over time in total emissions, although significant year-by-year fluctuations occur.

The air quality monitoring network in the country is obsolete and under-developed, with a limited number of stations, no automated stations and no measurements of particulate matter (PM10 and PM2.5) or ground-level ozone. No advanced treatment of monitoring data (modelling) is in place. However, the monitoring network will be substantially upgraded in 2010–2012.

The current national legal framework on air protection is obsolete and does not reflect the most recent internationally recognized developments in air quality assessment and management. No separate strategic or policy document on air quality management has been developed.

Air quality standards are based on the modification of the former Soviet system. These standards are laid down for 88 pollutants; standards for PM10 or PM2.5 are not available. Technology-based emission limit values or generally binding quantified requirements to reduce emissions are not applied.

The air quality assessment and management system is not coordinated with the measures to mitigate climate change. This lack of coordination prevents the exploitation of potential synergies. Applying an integrated approach, focused on preferential support to non-combustion renewable sources of energy (hydro, solar and wind), as well as to energy-efficiency measures and energy savings, would reduce both air pollution and greenhouse gas emissions.

Since 2000, the system of environmental permit issuing has been fully based on Soviet practice and does not reflect recent developments. Best available techniques (BATs) have not been defined and are therefore not taken into consideration during the permit issuing procedure. Existing legal provisions do not create a sufficient basis for permit issuing, especially the absence of technology-based emission limit values, but also the lack of guidance on BATs. The role of EIA in the permit issuing process is not fully defined and depends on decisions by the competent authority.

Water management and protection of the Caspian Sea

Water resources are characterized by their uneven spatial and seasonal distribution resulting in salinity of groundwater, exacerbated by inadequate drainage of irrigated lands. Inadequate water supply and irrigation networks cause high water losses, around 30 per cent of the total water abstracted. Some 70 per cent of available surface water resources are heavily polluted owing to the lack of wastewater treatment plants. About 80 per cent of the water used for drinking and irrigation purposes comes from the contaminated Kura and Araz rivers, which is a major problem that can only be solved in cooperation with neighbouring countries.

Since 2004, there has been progress in securing water availability, irrigation, water and sanitation cycle, and flood protection infrastructures, owing to significant investments both from the multilateral and bilateral institutions and from the State Oil Fund. The State budget for the running costs of the institutions involved in water resources management has also increased. As a result, the population in rural areas using improved drinking water sources increased by 10 per cent.

Some progress has occurred in sewerage and wastewater sectors. Biological wastewater treatment is increasing nationwide and the Caspian Sea monitoring data show a decrease in the concentration of pollutants. Some improvements have been achieved with the creation of the Azersu State Joint Stock Company, as the national provider of water and wastewater treatment services, and with the establishment of water-user associations in irrigation.

However, the very low water tariffs do not allow cost recovery or the promotion of efficient use of water. Water reuse is not promoted and the installation of water meters is proceeding at a very slow pace. Irrigation tariffs are currently charged per amount of water use instead of area, which is a positive first step.

Lack of specific water policy and water strategy documents is one of the major problems of water governance in Azerbaijan. National programmes and action plans contain components addressing water issues and together form the water policy. Given the number of actors involved in water issues and the limited communication among them, the lack of water-related structural documents is an important obstacle to effective water governance.

The legal framework for water in Azerbaijan has not kept up with the existing institutional infrastructure which is being developed. The majority of water-related laws in Azerbaijan have not changed since 2003, and almost no amendments have been introduced. It is commonly accepted that new systems are not being designed to comply with the existing norms, and there is a need to ensure that they comply with internationally accepted norms as well.

The main Caspian Sea issues include water pollution from the oil and gas industry, water pollution from households and from the Kura River delta, sea level oscillation and threats to the Sea's bioresources. In 2006, the Government started to implement more intense protection and rehabilitation measures such as using new technologies and cleaning devices and procedures for oil and gas exploration; cleaning up of oil-contaminated areas of the Absheron peninsula, and actions aimed at increasing and protecting Caspian Sea bioresources. However, further investments are necessary for cleaning polluted flows entering Azerbaijan (the Kura and Aras rivers), a problem which requires international joint action with neighbouring countries.

Waste management

The legislative framework for waste management has been significantly improved by the implementation of several new legislative norms. Actions needed to improve the waste management situation were included in the Comprehensive Action Plan for Improving the Environmental Situation for 2006–2010, which has led to a big reduction in the amount of accumulated waste.

The system of municipal solid waste management is receiving much more attention than previously. Waste collection, transportation and disposal works well in Baku City. Disposal practices have been significantly improved by upgrading operations and by concentrating waste at a single disposal site, which receives some 80 per cent of municipal solid waste collected on the Absheron peninsula. In general, however, existing landfills do not meet international sanitary standards. Waste separation is starting to be introduced. Rural areas are only partly covered by municipal waste services.

Significant improvement has been achieved in the area of industrial waste management. Outdated technologies are continuously being replaced with modern ones, reducing industrial waste generation. Oil and gas industries have upgraded their waste management practices, also with the encouragement of foreign investors.

However, waste-related data are of low quality and non-compliant with the recently approved waste classification. The most information on hazardous waste is collected on the Absheron peninsula, but the information from other regions is incomplete. Additionally, current waste statistics and other waste-related information do not include waste generated by activities in the country carried out by foreign investors.

Management of pesticide waste has significantly improved with the establishment of the Phytosanitary Control Service in 2006, which created conditions for taking concrete steps to solve this problem. Facilities for the storage of obsolete pesticides and for radioactive waste have been rehabilitated, and the measures implemented have significantly reduced environmental risks.

Medical waste remains a problem. There has been some improvement in the management of medical waste in the private health sector. No changes have been identified in the practices of the State-owned health sector. However, new legislation has been adopted and a strategy for health-care management has been drafted and is supported by all the ministries involved in this area.

Biodiversity, forestry and protected areas

Azerbaijan, as a party to a number of biodiversity-related conventions, has made increased efforts since 2003 to comply with their obligations and in this way to improve nature management in a country where the exploitation of natural resources had caused significant loss of biodiversity. There remain, however, some issues to be addressed, particularly in the areas of biodiversity monitoring; policy development and goal-setting; biodiversity and forestry legislation; and, assessment and evaluation of implementation.

Considerable investments have been made to create protected areas with the major objectives being to protect rare, endangered and endemic species, as well as the development of tourism in the national parks. Yet, no management plans have been developed, apart from Hirkan National Park, which has had a management plan approved, and Shah Dagħ National Park, which has a management plan in the pipeline.

However, biodiversity continues to be under threat as a result of harmful economic activities that do not take into account the need to conserve and sustainably use biodiversity and to maintain ecosystem services. Unsustainable agricultural practices, such as overgrazing by privately owned sheep and cattle, has caused serious degradation and erosion of the land and led to increased biodiversity losses in the country.

There is low forest cover in the country and a lack of commercial wood production. Since 2003, the Government has carried out some forest restoration and protection activities, but there is no up-to-date publicly available data on forest resources.

MENR does not participate fully in international and pan-European processes, such as the Convention on Biological Diversity, the Pan European Biological and Landscape Diversity Strategy (PEBLDS), ForestEurope (previously MCPFE) and the UNECE/Food and Agriculture Organization of the United Nations European Forestry Commission. Although it has submitted some reports, it is essential for the Ministry to follow some of the key biodiversity and forestry discussions and negotiations in order to participate in the decision-making and priority-setting meetings.

A Red Data Book was published in 1989 but the revised edition is still pending. There is a lack of available information on the status of vulnerable, endangered and critically endangered species of flora and fauna; a lack of joint implementation of activities with other sectors in efforts to support biodiversity conservation; and a lack of public awareness about this issue.

No policy framework has been formulated since the conclusion of the 2006–2009 National Biodiversity Strategy and Action Plan (NBSAP). Moreover, no external, publicly available report of implementation or assessment of implementation of the NBSAP is available.

INTRODUCTION

I.1 Physical context

Azerbaijan is situated in the Caucasus region of Eurasia. With its land area of 86,600 km², Azerbaijan is the largest of the three South Caucasus countries. The territory of Azerbaijan extends 400 km from north to south and 500 km from west to east. The country is bordered by the Russian Federation to the north (border length 390 km), the Caspian Sea to the east (800 km), the Islamic Republic of Iran to the south (756 km), Turkey to the south-west (15 km), Armenia to the west (1,007 km) and Georgia to the north-west (480 km).

Three main features dominate Azerbaijan's landscape: the long Caspian Sea coast, the mountain ranges of the Greater and Lesser Caucasus; and the wide flatlands at the center of the country. The western coast of the Caspian Sea forms the country's entire eastern border. The Greater Caucasus mountain range forms part of Azerbaijan's northern border with the Russian Federation and contains the country's highest peak, Mount Bazardyuze Dagi (4,485 m). The Lesser Caucasus range in western Azerbaijan is smaller, reaching only to about 3,500m and forming part of the border with Armenia. The extreme south-east border of Azerbaijan is formed by the Talish Mountains. Taken together, the three mountain systems cover some 40 per cent of the total land area.

Azerbaijan's two main rivers, the Kura River (length 1,515 km), and its tributary, the Araz River (1,072 km), both originate from the mountains of north-east Turkey. The Kura River enters north-west Azerbaijan from neighboring Georgia then flows south-east, forming a delta and draining into the Caspian Sea. The Araz constitutes part of Azerbaijan's southern border with the Islamic Republic of Iran and turns north-east and enters south-central Azerbaijan, where it joins the Kura and drains into the Caspian Sea.

The sea level of the Caspian Sea has a long history of fluctuations. During 1930–1977, the level of the Caspian Sea changed around - 28 m, and in the decade of the 1990s it rose annually by 12–14 cm and has now reached - 26 m. Damage extended over 800 km² over cities, towns, farmland and pastures. Its level has reportedly been stable since 2003.

Due to its extremely varied topography, Azerbaijan has a wide range of climates. The Great Caucasus mountain range has heavy snowfall during the winter above 3,000 m; the Kura plain has a temperate climate; while the Lenkeran lowlands in the south-east on the Caspian coast have a subtropical climate.

There are nine climatic zones in Azerbaijan according to the Köppen climate classification, ranging from subtropical to temperate and alpine climates. Precipitation is unequally distributed over the territory of Azerbaijan, varying between 150 and 1,900 mm and with significant inter-annual variations according to the initial national communication from the Azerbaijan Republic under the United Nations Framework Convention on Climate Change, 2000. In the southern coast of Absheron, precipitation is less than 200 mm per year, increasing to 400 mm/y in most of the Kura River basin; it averages 600–900 mm/y in the foothills and mountainous zones; on the southern slope of the Greater Caucasus precipitation amounts to 1,000–1,300 mm/y; and it attains a maximum yearly average of 1,200–1,400 mm/y in the southern Lenkeran lowlands. On the other hand, evaporation indexes run as high as 93 per cent of annual precipitation. Evaporation indexes in the basin are 61 per cent in Armenia and 50 per cent in Georgia.

In the lowlands, winters are relatively mild with high precipitation, while summers are hot, dry and long. The average lowland temperature in July is +27°C, but sometimes reaches the upper 30s. In January, the average lowlands temperature is +1°C. The capital Baku, on the Caspian Sea, has a moderately warm and dry subtropical climate, with a hot summer and a short, mild winter. Baku has the greatest annual average number of sunny days (284) in the Caucasus, but it is susceptible to year-round strong winds.

I.2 Natural resources

Azerbaijan has a variety of mineral resources including aluminum, copper, iron ore, lead, limestone, salt, and zinc, but the most important of its natural resources are crude oil and gas. The bulk of its oil reserves are located offshore, under the Caspian Sea, with most developed oilfields near the Absheron Peninsula. Almost all natural gas is produced offshore. The Shah

Denis gas field, situated in the Caspian Sea about 100 kms south of Baku, is the one of the largest natural gas field discoveries during the past 20 years.

According to BP and the U.S. Energy Information Agency (EIA), Azerbaijan's proven oil reserves in 2009 were about 7 billion barrels and the reserves/production ratio was 29.3 years. However, the estimate of the State Oil Company of the Azerbaijan Republic (SOCAR) puts the proven oil reserves at 17.5 billion barrels. The discrepancy between these figures is caused by different classification systems and methods used in the estimations. The oil reserves of Azerbaijan account for somewhere between 0.6 per cent and 1.5 per cent of the world's total oil reserves.

Gas reserves estimates vary from 0.85 trillion m³ to 1.35 trillion m³. In 2008, domestic gas production was 16.2 billion m³, of which about one-third (5.55 billion m³) was exported.

I.3 Demographic and social context

With 8.9 million inhabitants (2009, UNECE database), Azerbaijan has the largest population of the countries of the South Caucasus. The average population density is 103 persons/km² and 51.8 per cent (2009 source:

ASTAT) of the population live in urban areas. The most densely populated area is the Absheron Peninsula in the east, where the capital Baku (pop. 1,828,800) is located. Other industrial centers and important towns are Ganja (pop. 301,400) in the west and Sumgait (pop. 288,400) on the Caspian coast.

Azerbaijan has a very homogenous population. According to the 1999 census, 90.6 per cent of the population was Azeri. The minority ethnic population groups include Dagestani (2.2 per cent), Russians (1.8 per cent), Armenians (1.5 per cent), Talish (1 per cent) and other smaller groups representing less than 1 per cent of the total population

The country's demographic indicators have changed somewhat over the past ten years. The total fertility rate is on the rise and the birth rate has displayed an increase of 28 per cent since 2002. Although the life expectancy of the female population has remained steady, the life expectancy of the total population has risen a bit due to the longer life expectancy of the male population. The infant mortality rate has posted a significant 30 per cent drop, while the general mortality rate has unfortunately risen slightly (see table I.1).

Table I.1: Demographic and health indices, 2000–2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Population (in millions)	8.1	8.2	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9
Birth rate (per 1,000)	14.8	13.8	13.8	14.0	16.1	17.2	17.8	18.0	17.8	..
Total fertility rate	2.0	1.8	1.8	1.9	2.0	2.3	2.3	2.3	2.3	..
Life expectancy at birth (in years)	71.8	71.9	72.2	72.3	72.4	72.4	72.4	72.4	72.4	..
Life expectancy at birth: male (in years)	68.6	68.6	69.4	69.5	69.6	69.6	69.6	69.7	69.7	..
Life expectancy at birth: female (in years)	75.1	75.2	75.0	75.1	75.2	75.1	75.1	75.1	75.1	..
Percentage of population aged 0–14 years	30.3	29.2	28.0	26.9	25.9	25.0	24.1	23.5	22.9	..
Percentage of population aged 65+ years	5.8	6.1	6.4	6.7	6.9	7.0	7.1	7.0	6.9	..
Mortality rate (per 1,000)	5.9	5.7	5.8	6.0	6.1	6.3	6.2	6.3	6.2	..
Infant mortality rate (per 1,000)	16.4	16.6	16.7	15.5	14.4	12.7	11.9	12.1	11.4	..

Source: UNECE database. Accessed on 28.1.2010.

Azerbaijan belongs to the medium human development country group. Its Human Development Index (HDI), calculated by the United Nations Development Programme (UNDP), has risen steadily. In 1997, its HDI stood at 0.695 and the country ranked 103rd out of 174 countries. By 2007, its HDI was 0.778 on a scale

of 0.0 to 1.0 and it ranked 86th out of 182 countries reviewed.

The official language is Azeri, a Turkic language closely related to Turkish and Turkmen. It is written using the current Turkish version of Latin script. The



The Maiden Tower, Baku

Russian language is being phased out but is still used widely.

I.4 Economic context

Azerbaijan's economy has been closely connected to the oil industry since the world's first modern offshore oil well was drilled in Bibi-Heybat, near Baku, in 1846. After 1875, the oil industry's development accelerated and in the early 20th century almost half of the world's oil was extracted in Baku. Oil production was the driving force of Azerbaijan's economy, but the oil industry also developed engineering and industrial capabilities which led Azerbaijan to become a major refining and oilfield equipment production centre for the former Soviet Union. Oil production peaked at some 500,000 barrels per day (bbl/day) during the Second World War but fell significantly after the 1950s, when the Soviet Union redirected resources elsewhere.

Pipeline systems are essential to the oil and gas trade and Azerbaijan, with its strategically important pipeline infrastructure, is becoming an increasingly important transit corridor for oil and gas. Most of the country's oil and gas production is exported through

pipelines, which play a crucial role in its economic development. In addition, Azerbaijan is able to offer three important transit pipeline routes through its territory (see map I.1).

The majority of oil exports pass through the Baku-Tbilisi-Ceyhan (BTC) pipeline system, which runs 1,785 km from the Azeri-Chirag-Gunashli (ACG) fields in the Caspian Sea, via Georgia, to the Mediterranean port of Ceyhan, Turkey. From there the oil is shipped by tanker, mainly to European markets. BTC capacity is one million bbl/day. The BTC pipeline is also used to transport oil from Kazakhstan, which is transported by oil tankers across the Caspian Sea to the pipeline head at Sangachal Terminal, near Baku.

The 1,335 km (830-mile) long, 100,000 bbl/day-capacity (5 million tons per year) Baku-Novorossiysk pipeline runs from Sangachal Terminal to Novorossiysk, Russia on the Black Sea. In April 2009, SOCAR announced plans to nearly double exports to 50,000 bbl/d of oil in 2009, as the BTC is close to capacity because of production growth in the ACG oil fields as well as increasing throughput from Kazakhstan.

The Baku-Supsa pipeline has an estimated capacity of 145,000 bbl/day and runs 836 km (520 miles) from Baku to Supsa, Georgia on the Black Sea. The pipeline is used by ExxonMobil Company to export its share of oil from the ACG fields because ExxonMobil, although it is a participant in AIOC, is not a participant in the BTC pipeline.

After gaining its independence in 1991, Azerbaijan's economy collapsed and by 1995 GDP has dropped to 37.0 per cent of its 1989 level. Economic recovery was very slow, and GDP only returned to its pre-1989 level in 2005. After 2005, however, GDP growth has been extremely strong and the 2009 GDP was double the 2005 figure.

The heavy direct foreign investment in the oil and gas sector since the end of the 1990s has resulted in a two-track economy, where a fast-growing international hydrocarbon sector accounting for most of the country's investments and export income contrasts with a non-oil-related inefficient internal economy sector that cannot compete with imports or generate exports. In 2007, the oil and gas sector represented 70 per cent of industrial output and the hydrocarbon sector brought in over 90 per cent of export revenue. Industrial production contributes over 60 per cent of GDP (2008), double the 1995 figure. Rapid industrialization has led to a decline in the importance of the agricultural sector: in 1991, it still produced 30 per cent of GDP whereas by 2007, its share of GDP

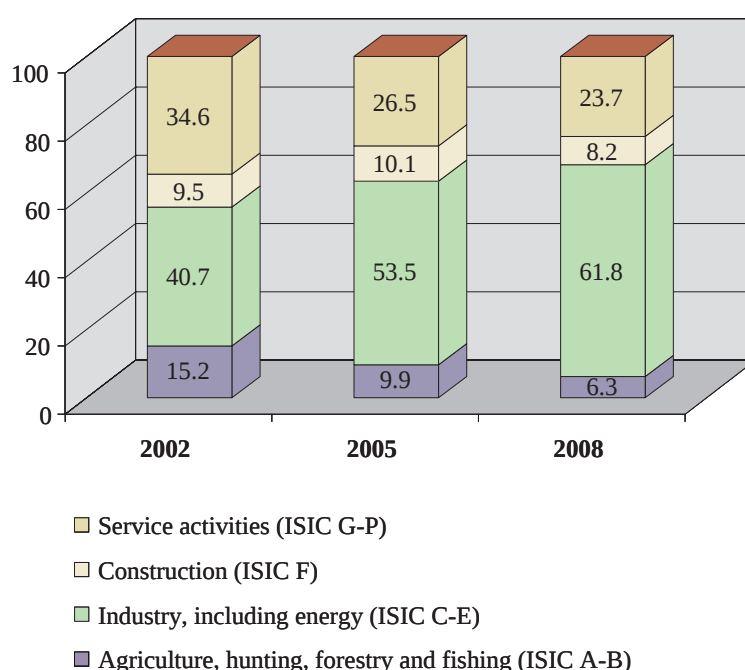
had plummeted to 6 per cent – less than construction (8 per cent).

Azerbaijan's current account balance was negative up to 2004 but has shown a phenomenal positive development every year since then: the 2009 positive current account balance was 35.6 per cent of GDP and stood at US\$ 16.5 billion.

Azerbaijan started privatizing State property already in 1993. In the first phase of privatization, from 1996 to 1998, some 21,000 small and 1,000 medium- and large-sized enterprises were affected. Practically all small businesses and 90 per cent of agricultural undertakings were privatized, and in 2000, the private sector accounted for 68 per cent of the country's GDP. Currently, the second phase of privatization is underway. This phase mainly envisages privatization of medium and large-scale enterprises. As a result of the consistent privatization policy, the private sector produced some 81 per cent of GDP in 2007.

Between 1997 and 2008, Azerbaijan's oil production increased almost fivefold. Out of the 875,000 bbl/day production in 2008, about 85 per cent (749,000 bbl/day) was exported. Peak oil capacity is expected to be pushed to over 1 million bbl/day in 2009. Currently, there are five offshore production platforms and the sixth, Chirag Oil Project, is due to come on stream in 2013.

Figure I.1: GDP by sector in 2002, 2005 and 2008, as a percentage of total GDP



Source: UNECE statistical database, 2010.

I.5 Institutions

Azerbaijan is a presidential republic. The Head of State is a President who is directly elected for a five-year term. The President appoints the Prime Minister, whose appointment is confirmed by the National Assembly.

The President also appoints the Cabinet of Ministers which is composed of the Prime Minister, the First Vice Premier, Vice Premiers, Ministers and 18 other heads of central executive bodies (see table I.2).

The unicameral National Assembly, the Milli Mejlis, has 125 members, all elected from single-member constituencies for five-year terms. The President can veto a decision of the Parliament, which needs a 95-vote (three-quarters of the deputies) majority to override a presidential veto.

Judicial power is vested in the Constitutional Court, the Supreme Court, the Economic Court and lower level general and specialized courts. The Milli Mejlis appoints all judges at the recommendation of the President.

Local government consists of Executive Committees and municipal councils. Members and heads of Executive Committees are appointed by the President, while members of the municipal councils are elected for five-year terms in local elections.

Administratively speaking, Azerbaijan is divided into 59 districts, 11 city districts, and the Autonomous Republic of Nakhchivan, which is subdivided into 7 regions and one city. The President of Azerbaijan appoints the governors of these units in Azerbaijan proper, while the government of Nakhchivan is elected and approved by the parliament of the Autonomous Republic of Nakhchivan.

Table I.2: Cabinet of Ministers

Ministry of Agriculture
Ministry of Communication and Information Technologies
Ministry of Culture and Tourism
Ministry of Defence
Ministry of Defence Industry
Ministry of Ecology and Natural Resources
Ministry of Economic Development
Ministry of Education
Ministry of Emergencies
Ministry of Finance
Ministry of Foreign Affairs
Ministry of Industry and Energy
Ministry of Justice
Ministry of Labor and Social Protection of Population
Ministry of National Security
Ministry of Taxes
Ministry of Transport
Ministry of Youth and Sport

Source: http://www.azerbaijan.az/portal/StatePower/Ministers/ministersCabinet_e.html.

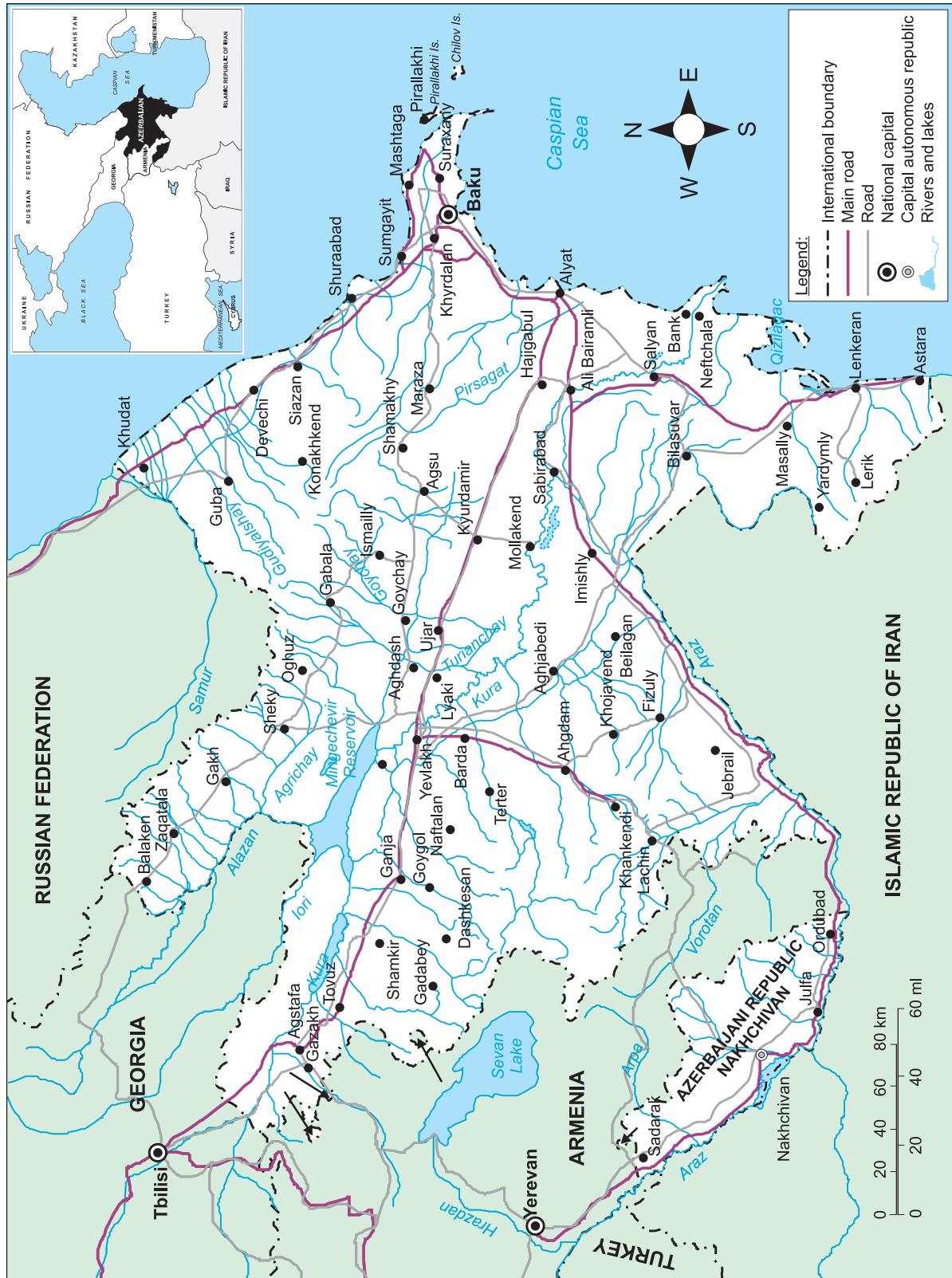
Accessed on 24.8.2010.

Table I.3: Selected economic indicators, 2000–2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
GDP (% change over previous year; in 2005 prices)	11.1	9.9	10.6	11.2	10.2	26.4	34.5	25.1	10.8	9.3
GDP at 2005 prices (million manat)	6,656.0	7,315.0	8,088.0	8,991.0	9,903.0	12,523.0	16,837.0	21,055.0	23,334.0	25,504.0
GDP per capita at 2005 prices (manat)	824.0	897.0	983.0	1,082.0	1,179.0	1,473.0	1,956.0	2,414.0	2,640.0	2,851.0
GDP at current prices (million manat)	4,718.0	5,316.0	6,062.0	7,146.0	8,530.0	12,523.0	18,746.0	28,360.0	40,137.0	34,579.0
GDP at current prices (million US\$)	5,272.7	5,708.1	6,235.3	7,275.5	8,680.2	13,246.2	20,982.8	33,049.8	48,852.2	..
GDP per capita (US\$ per capita)	653.0	700.1	757.6	875.6	1,033.6	1,558.4	2,437.3	3,788.8	5,527.5	..
CPI (% change over the preceding year, annual average)	1.8	1.6	2.8	2.1	6.7	9.6	8.2	16.6	20.8	1.4
PPI (% change over the preceding year, annual average)	27.5	2.0	-2.3	16.2	12.8	16.5	16.1	9.0	15.0	-12.7
Registered unemployment (% of labour force, end of period)	..	..	..	10.7	8.4	7.6	6.8	6.5	6.1	..
Current account balance (million US\$ at current exchange rate)	-168.0	-52.0	-768.0	-2,021.0	-2,589.0	167.0	3,708.0	9,019.0	16,454.0	..
Current account balance (as % of GDP)	-3.2	-0.9	-12.3	-27.8	-29.8	1.3	17.7	27.3	33.7	..
Net FDI inflows (million US\$ at current exchange rate)	129.2	226.5	1,066.8	2,351.7	2,351.3	459.2	-1,289.5	-5,034.5	-540.8	..
Net FDI flows (as % of GDP)	2.7	4.3	17.6	32.9	27.6	3.7	-6.9	-17.8	-1.3	..
Cumulative FDI (million US\$)	3,816.6	4,043.1	5,109.9	7,461.7	9,813.0	10,272.1	8,982.7	3,948.1	3,407.3	..
Foreign exchange reserves (million US\$)	679.6	725.0	720.5	802.8	1,075.1	1,177.7	2,500.4	..	..	..
Exports of goods and services (million US\$ at current exchange rate)	2,118.0	2,369.0	2,667.0	3,057.0	4,235.0	8,332.0	13,955.0	22,517.0	32,133.0	..
Imports of goods and services (million US\$ at current exchange rate)	2,024.0	2,130.0	3,121.0	4,770.0	6,312.0	7,003.0	8,132.0	9,424.0	11,464.0	..
Net exports of goods and services (million US\$ at current exchange rate)	94.0	239.0	-454.0	-1,713.0	-2,077.0	1,329.0	5,823.0	13,093.0	20,669.0	..
Gross external debt (million US\$)	1,040.0	1,150.0	1,250.0	1,430.0	1,500.0	1,815.0	1,972.0	2,439.0	2,997.0	..
Ratio of gross debt to exports (%)	49.1	48.5	46.9	46.8	35.4	21.8	14.1	10.8	9.3	..
Ratio of gross debt to GDP (%)	19.7	20.1	20.0	19.7	17.3	13.7	9.4	7.4	6.1	..
Exchange rates: annual averages (Manat/US\$)	0.895	0.931	0.972	0.982	0.983	0.945	0.893	0.858	0.822	..
Population (million)	8.1	8.2	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9

Source: UNECE Statistical database, 2009.

Map 1.1 Map of Azerbaijan



Source: United Nations Cartographic Section, 2010.

Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

***PART I: POLICYMAKING, PLANNING
AND IMPLEMENTATION***

Chapter 1

POLICYMAKING FRAMEWORK FOR SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PROTECTION

1.1 Developments since the first EPR

The second EPR review is taking place in 2010, which was declared the Year of the Environment by the President of Azerbaijan. Accordingly, high priority has been granted to the environment, raising awareness and moving environmental protection higher up the priority list of Government policies. As a result, significant progress has been observed in terms of the attention to environmental problems at the governmental level, as evidenced by increased allocation in short-term funding plans or the implementation of projects with considerable environmental and health impact.

More generally, in terms of their legal and political mandate and their capacity, environmental institutions in Azerbaijan are considerably stronger at the time of the second EPR review than they were a decade ago, when the Ministry of Ecology and Natural Resources (MENR) was being established. As regards the legal and policy framework, the main policy documents and legislation were adopted during the first EPR. However, laws and regulations that were adopted at a very fast pace at the time created a number of shortcomings, both in terms of implementation and coherence among various legal acts, as exemplified by the delayed adoption or absence of the secondary legislation that is necessary for their implementation. Contradictory laws and standards from the period before 1990 were not uncommon. The situation today is significantly better. The legislative framework has been strengthened in certain areas with new laws and the elaboration of more detailed bylaws. There is, however, considerable room for improvement, especially with regard to secondary legislation, which is at times non-existent or not readily accessible and available. Implementation and compliance are always issues for further attention.

In the area of environmental policy, like many other countries with economies in transition, Azerbaijan implemented its National Environmental Action Plan (NEAP) for 1998–2003. As a direct result of the NEAP, Local Environmental Action Plans (LEAPs) were introduced in the country, involving

public participation and stakeholder dialogue and assistance to local and regional authorities with policy formulation and priority-setting. Despite the considerable contributions of the first NEAP, Azerbaijan did not complete the adoption of its second NEAP. Instead, Azerbaijan has developed and implemented new national environmental policies with various scopes and objectives and with varying degrees of success as regards the identification of clear priorities for financing and implementation.

Environmental policy lacked adequate financing strategies, thus adversely impacting implementation particularly at the local level. However, by the time of the second EPR review, the situation had improved considerably in terms of actual funding for the environment, partly due to increased attention to the environment following the President's designation of 2010 as the Year of the Environment.

A noticeable improvement in the area of policy is that programmes and action plans identify actions and responsible institutions, although as a general rule there are no budget estimates. At the same time, however, key policy documents in important areas related to environmental protection and sustainable development do not exist or have been developed but not adopted by the Cabinet of Ministers. Additionally, important programs, including the program on environmental protection, which had been adopted during the first EPR, were not renewed or were about to expire at the time of the second review, with no evidence of plans for their renewal.

In the first decade of its existence, the Ministry of Ecology and Natural Resources (MENR) was able to promote sectoral integration by developing environmental programmes and action plans or contributing to the development of programmes on sustainable development. Other ministries and State agencies are directly involved in both environmental protection and sustainable development. Interministerial cooperation may take a number of forms, from the more formal through the Cabinet of Ministers, to inter-ministerial State commissions and

working groups, but the mechanisms of involvement and cooperation have not always met expectations. As a result, strengthening institutional coordination and cooperation among ministries linked to the environment remains a key challenge.

MENR has been considerably restructured to cut costs since the first EPR, in particular with regard to its regional departments. In terms of capacity, the number of employees has not increased considerably, although spending on projects with positive environmental impact has increased significantly since the first EPR (Chapter 5).

1.2 Environmental policy¹

Policies, strategies and plans for sustainable development and environmental protection

Since the first EPR, and following the completion of the first National Environmental Action Plan (NEAP) for the period 1998–2003, a second NEAP was not adopted, although one was developed. This happened despite the fact that the first NEAP can be credited with major successes, including contributing to the establishment of the Ministry of Ecology and Natural Resources and strengthening the development of Local Environmental Action Plans (LEAPs). It appears that when the new Ministry was established in 2001, it was decided that the Ministry would develop its own national plan, following its own format developed around State programmes and related action plans.

In the absence of a second NEAP, the main environmental policy document since the first EPR has been the National Programme on Environmentally Sustainable Social and Economic Development for the period 2003–2010, which was endorsed by the 2003 Presidential Decree No. 1152 Approving the National Programmes on Ecology. The National Programme covers the environmental aspects of the country's overall development strategy and is accompanied by an action plan covering the years 2003–2010 for its implementation. The action plan focused on five major areas, namely environmental protection and use of natural resources; global environmental problems; industrial complexes; agriculture and tourism; and education, science and culture.

The National Programme and its action plan were further complemented by the Comprehensive Action Plan on Improvement of the Environmental Situation for the period 2006–2010, which dealt with improving the environmental situation in various areas (Baku Bay, the Bebiheybat area, the areas adjacent to Heydar Aliyev international airport, Absheron peninsula, and other parts of Azerbaijan). The Comprehensive Action Plan also aimed to address general ecological problems and improve legislation.

The Plan reflects some of the new pieces of legislation or amendments to existing laws adopted since the first EPR. Key amendments include stiffer administrative sanctions for environmental offences covered in the Administrative Code and improvement of existing norms or the inclusion of new norms on determining environmental crimes covered by the Criminal Code.

However, major legislative advancements outlined in the Comprehensive Action Plan remain unimplemented. For example, the Plan prescribed drafting new laws or amending existing ones on improving environmental norms covered in the 1999 Law on Environmental Protection and on the determination of environmental norms covered in the Law on Air Protection. The Plan also foresaw new legislation on Environmental Impact Assessments, on monitoring of environment and natural resources, and on the establishment of environmental protection funds. Major amendments to the Forest Code that would allow the formation of a Forest Fund and a land register covering trees and shrubberies that are not part of the Forest Fund have not materialized.

MENR has been the main institution responsible for the implementation of the Action Plan and the Comprehensive Action Plan, providing key technical support and guidelines along the way. One of the strengths of the Action Plan has been the identification not only of the actions envisaged but also of the main implementing agencies and the required timelines. The main implementing agencies included those directly involved in key sectors, including agriculture, education, the environment, industry, science, and tourism.

However, there have also been considerable challenges in terms of implementation. This was partly due to the fact that the National Programme and the Action Plan lacked a clear identification of priority areas for funding purposes and did not include cost estimates. Additionally, and perhaps more importantly, priority items were not linked to budgetary sources but rather usually relied on sector-specific funding from a variety

¹ Procedures governing the development and approval of State policy documents and legal acts are outlined in the Law of Normative Acts and have not changed since the first EPR. The reader may refer to the first EPR for a more detailed discussion on the matter.

of often external sources. One important source in recent years has been the Presidential Reserve Fund, but the availability of funds from this source is not known beforehand. Although financing decisions are based in principle on the consistency of the proposed actions with measures envisaged in various State programmes, there is no integrated State policy planning document that defines spending priorities and rules for selection and arbitration. On the other hand, budgetary requests by MENR are not linked to the implementation of existing programmes but rather to the day-to-day functioning of the Ministry; in this case, budget lines cover areas such as equipment and salaries (see Chapter 5 for more details).

Significantly, although the National Programme expires in 2010, no plans are evident for its extension or renewal. This in effect means that the country will probably follow 2010, the year that has been designated as the Year of the Environment, without a coherent State policy document on environmental protection.

Instead of relying on a coherent programme or strategy, environmental policy will be based primarily on the Additional Action Plan on the Improvement of the Ecological Situation in the Republic of Azerbaijan for 2010–2014, a draft of which had been finalized and circulated to the Cabinet of Ministers at the time of the second EPR review. One of the major advantages of the Plan is that it constitutes the first attempt at costing environmental expenditure. It should be added, however, that not all projects included in the Plan are costed. As with previous similar State documents, implementing and supporting agencies are clearly designated. Although the draft Additional Action Plan introduces a number of improvements over previous practices, it cannot replace a coherent programme or strategy on environmental protection. Continuity and predictability in setting environmental priorities are important elements for ensuring effective environmental protection and management and signalling the intentions of the environmental authorities and the Government to domestic and international actors.

Sustainable development

As Azerbaijan improves its economic performance, integrating environmental concerns into sectoral policies remains a key challenge for the future in order to mitigate negative environmental impacts from high-impact economic sectors, including the oil and gas extracting industries. Principles of sustainable development are used to a certain extent as a basis for

economic activities in the country, as can be seen from analysis later on in this Chapter. Significant progress can be identified in this sense, given that before 2003 there was no coherent programme on sustainable development. Individual programmes were dealt with on an ad hoc basis. Since 2003, programmes and laws have been put in place to deal with these problems in more strategic terms. In 2003 the State Programme on Poverty Reduction and Economic Development covering 2003–2005 (the country's sustainable development programme) was adopted. The main implementing body for the sustainable development programme is the Ministry of Economic Development (MED), which also coordinated the implementation of the State Programme for the Socioeconomic Development of the Regions of Azerbaijan for 2004–2008 and is currently coordinating the implementation of the successor of this Programme for 2009–2013 (see next section).

Thus, when compared to environmental protection, it is evident that the policy framework for sustainable development is better developed, although a period of discontinuity existed between the expiration of the first programme, which lasted between 2003–2005, and the adoption in 2008 of the new programme, the State Programme on Poverty Reduction and Economic Development covering 2008–2015, and its action plan covering the years 2008–2010. The State Programme is effectively the country's national sustainable development strategy, although its primary focus is poverty reduction. Nevertheless, one of its nine goals (goal VII) is “improving the environmental situation and ensuring sustainable environmental management”. Additionally, the State Programme defines actions aimed at ensuring reliable water supply and sanitation for everyone, in order to achieve the Millennium Development Goals.

Environmental concerns also appear under section 4.3.6 on Industry and Energy Policy, where environmental safety is clearly designated as an objective of the overall policy. Proposed instruments include regular monitoring and financial sanctions: “Regular monitoring will be conducted and financial sanctions will be applied where necessary to minimize any negative impact on the environment from the development of the fuel-energy complex.”

Land use in environmentally sustainable ways is identified under section 4.3.7 “Agricultural Development and Food Security”. Only limited attention is paid to the impact of environment on health, as it is mentioned only twice under Chapter 6.2 on Health development.

Box 1.1: The draft Additional Action Plan on the Improvement of the Ecological Situation for 2010–2014

The draft Additional Action Plan consists of ten substantive sections, which are however unevenly developed. The most extensively developed one focuses on development on green areas, such as urban areas, along the roads. It includes 15 projects, all of which have cost estimates. Other well-developed sections are wastewater management (ten projects, only one of which has cost estimates); industrial and household waste management (eight projects, two of which have cost estimates); restoration of lakes and surrounding areas polluted by oil waste and other hazardous substances (six projects, only one of which includes cost estimates), and improvement of legislation (nine projects, none of which includes cost estimates).

Less developed sections in the Plan are water supply improvement in country regions (two projects, one of which includes cost estimates); biodiversity conservation (two projects, both of which have cost estimates); environmental monitoring (two projects, one of which has cost estimates); raising environmental awareness (two projects, with one cost estimate); and use of alternative sources (with only one project).

In terms of the total figures included in the Plan, which at the time of the second EPR stood at roughly ten million Azeri manat, roughly two-thirds concern this development, while the rest cover the remaining nine substantive sections of the Additional Action Plan.

Under Chapter 6.3 on Environment, there is a brief description of the main challenges resulting from the current situation, in particular with regard to land, air, water, biodiversity, and industrial and domestic waste. The programme recognizes that environmental sustainability is a cross-cutting issue and argues that environmental concerns have been taken into account into other areas of the State programme, particularly economic development and education. In reality, environment is not mentioned at all under the section on education, although it is covered partly in the Action Plan for 2008–2010 that accompanies the programme.

The Action Plan and its implementation

In order to achieve the stated targets for sustainable development and in particular sustainable environmental management, activities are outlined in the Action Plan in a number of priority directions. These include sustainable management of forest resources; sustainable management of water resources; improved management of land resources and prevention of desertification; sustainable management of biodiversity; sustainable management of the atmosphere; expansion of use of alternative energy sources; comprehensive waste management; overall management of mountainous and coastal ecosystems; improvement of the legal and regulatory framework; monitoring systems and resources for environmental management; and ways to increase environmental education and awareness.

The Action Plan has five priority areas. Given that currently there is no clear environmental policy document beyond 2010, it is instructive to focus more on the coverage of the environment sector, which appears under “sustainable environmental protection

management”, under priority area 3 “Human Capital Development and Social Progress”. Although the Action Plan was still ongoing at the time of the second EPR review, implementation in several areas progressed satisfactorily, to the credit of MENR, although many tasks remain to be accomplished. However, in terms of the policy and legislative framework, there exist only two objectives. The first in effect calls for adjusting the national legal and regulatory framework to remain in compliance with international obligations because of participation in international conventions and treaties and for using international regulations and standards, as well as requirements of conventions and treaties. The second objective, outlined in item 3.3.9.2 “Improving the legislative framework on protection of the environment and use of natural resources”, clearly aims at addressing existing shortcomings within the national policy and legislative framework. Yet this objective focuses solely on two narrow areas of legislation, namely waste and GMOs. To ensure that the existing framework is strengthened and deepened, it is important to see to it that this objective is included and broadened in subsequent action plans that go beyond 2010.

Sectoral policies

In addition to the environmental policy and sustainable development programmes and actions plans, a number of sectoral policies have been developed since the first EPR.

Sectoral policies going beyond 2010

Since the first EPR, Azerbaijan has adopted the following sectoral policies:

- (a) State Programme on Renewable and Alternative Sources of Energy, 2008–2015 and Concrete Action Plan 2010–2020 for alternative sources. The State Programme for Development of Alternative and Renewable Sources of Energy was approved in 2004 but activities, including studies on potential alternative renewable energy sources and capacity-building measures, were launched only in 2008–2009. Nevertheless, this is an important milestone, considering that the energy sector is the main source of pollution and greenhouse gases in Azerbaijan. A State Agency for Renewable Energy and Alternative Sources of Energy was established within the Ministry of Fuel and Energy during the implementation of the Programme. The Programme expresses the intention to offer incentives for investments in renewable energy, although detailed incentives had not been elaborated, thus leaving a gap in implementing the Programme and attracting investment. Construction of small hydropower and wind-power stations had started at the time of the EPR review.
- (b) State Programme for the Development of Fuel Energy Complex for the period 2005–2015 has been adopted. One component aims at reducing the environmental impact of energy generation by upgrading and increasing the energy efficiency of thermal plants. Also foreseen is the introduction of modern technologies in oil and gas extraction and transport.
- (c) State Programme for the Socioeconomic Development of the Regions of Azerbaijan for the period 2009–2013, which in effect is the continuation of the State programme for the period 2004–2008. Both programmes attracted considerable resources for the development of energy and water and sanitation infrastructure in the country since the first EPR.
- (d) State Programme on Ensuring the Provision of Food Security for the period 2008–2015.

Sectoral policies expiring in 2010

- (a) State Strategy on Hazardous Waste Management for the period 2004–2010 (Chapter 8)
- (b) Hydrometeorology Development Programme for the period 2004–2010 with planned actions for improved monitoring (Chapter 3)
- (c) State Programme on Summer/Winter Pastures, Effective Use of Meadows and Desertification Prevention for the period 2004–2010. This Programme defined necessary activities for the period 2004–2010 to prevent further degradation of pastures, but apart from some

survey activities, little has been done. Thus, the key issue of unsustainable agricultural practices, such as overgrazing by privately-owned sheep and cattle, remains, causing serious degradation and erosion of the land and increased biodiversity loss. The main reasons for this lack of action are the absence of a mechanism to implement the Programme in a coordinated way and differing priorities, with the Ministry of Agriculture prioritizing food security over land degradation. Furthermore, steps towards greater decentralization are a further barrier for effective control. Tax collection and supervision of pasture land take place at the local level, where MENR is not represented, and neither the Ministry of Agriculture nor any other concerned Ministry has taken any action.

Discontinued sectoral policies

- (a) State Programme on Reforestation and Afforestation for the period 2003–2008, which included measures to rehabilitate polluted land and mitigate climate change (Chapter 9);
- (b) National Strategy and Action Plan on Biodiversity Conservation and Sustainable Use for the period 2006–2009 (Chapter 9).

No strategy or programme on climate change mitigation or adaptation exists, and there is no evidence that there is a plan to develop such strategies. Similarly, no Risk Reduction Strategy has been developed.

It is worth noting that for the sectoral programmes expiring in 2010, no clear plans exist for the development of their successor programmes. Similarly, there is no evidence that strategies and programmes that already expired at the time of the second EPR review, including the National Strategy and Action Plan on Biodiversity Conservation and Sustainable Use, will be reactivated.

1.3 Environmental legislation and implementation

The main environmental legislation was established by the time of the first EPR and was covered extensively there. The basis for environmental legislation is provided by the Constitution, which defines living in a healthy and clean environment as a right of the country's citizens. The two main environment-related laws safeguarding this right are, as in the first EPR, the Law on Environmental Protection and the Law on Environmental Safety, both adopted in 1999. The Law on Environmental Protection is a framework law and covers all media (water, soil, air), waste

management, protection of fauna, protected areas and ecological expertise. This framework law has not been significantly amended since the first EPR, although minor changes have been made since the first EPR. The Law on Environmental Safety was extensively amended in 2007 to introduce changes relating to noise and vibration in public spaces. Following these changes, presidential decrees in 2008 and 2009 set vibration and noise standards in residential and public buildings and granted authority to monitor and enforce compliance to MENR, the Ministry of Interior Affairs and the Ministry of Health. The two Codes on Water (Chapter 7) and Land have not changed significantly. Improvements have been made to Azerbaijan's 1997 Forest Code (Chapter 9).

At the time of the first EPR, Azerbaijan had adopted some sector and issue-specific legislation, on for example air quality, forestry, land use, mineral resources, nature and biodiversity, waste management, and water quality.

In a few of these areas, there have been significant developments. The 1998 Law on Domestic and Industrial Waste was significantly amended in 2007, and these changes were followed by several cabinet of minister regulations covering the inventory of industrial waste, hazardous waste passports and transboundary transport, waste collection for urban and residential areas including fees for collection, separation, recycling and disposal of waste, and the management of medical waste (see Chapters 5 and 8). The 2002 Law on Access to Information on Environmental Matters was considerably changed in 2010, adding provisions on contract issuing for requests of information by the public and access to information (Chapter 3). The Administrative Offences Code was amended, significantly increasing fines for offences (Chapter 2).

Few new laws have been adopted since the first EPR. In 2004, the Law on Hunting was adopted, regulating the hunting process and defining the rights and obligations of hunters and NGOs. According to the Law, MENR is now the only State authority controlling hunting and the management of hunting areas.

The Law on Phytosanitary Regulations was adopted in 2006, involving both the Ministry of Agriculture and MENR. The Law deals with the prevention of diseases and protection, especially in agricultural areas. Following the Law, the Phytosanitary Control Service was established under the Ministry of Agriculture in 2006, dealing among other things with obsolete pesticides, which still pose a major environmental problem in Azerbaijan (Chapter 8).

The 2008 Law on Natural Treatment Areas and Resorts is connected to the 2000 Law on Nature and Protected Areas. The new Law focuses on natural cures for patients but is linked to the development of protected areas. The 2000 Law on Nature and Protected Areas itself was subject to significant change at the time of the EPR review, to address the demands created by substantial increases in the national territory designated as protected areas. At the time of the review, the proposed amendments were considered under normal consultation procedures at the Cabinet of Ministers. Finally, the Law on Beekeeping was adopted in 2009.

Overall, environmental legislation is in place in several areas but still needs further development, in particular with regard to implementation legislation. Azerbaijan faces difficulties with implementation and enforcement legislation due to limited financial resources, especially at the regional and local levels.

The effectiveness of the two framework laws depends partly on adequate compliance and enforcement mechanisms (Chapter 2), especially in those cases where they can be applied without bylaws, but also partly on the quality of implementing secondary legislation, rules and regulations.

Significant progress has been made on this latter front. For example, in waste management, several bylaws have been adopted since 2007, including 2008 regulations on inventory of industrial and hazardous waste, cross-border transportation of hazardous waste, management of medical waste, identification of fees for storage, and collection and disposal of waste.

Improvements can also be seen in monitoring. There is a special provision in the framework Law on Monitoring. In 2004, the Cabinet of Ministers Resolution on the Rules of State Monitoring of Environment and Natural Resources was adopted. These bylaws regulate different types of monitoring for environmental media (air, soil and water).

The Law on Access to Information on Environmental Matters has also been strengthened with several bylaws, for example the 2003 one on the Classification of Information about the Environment. In this case, the bylaw defines the institution where the public can seek information, depending on whether the information is classified as open- or closed-access. Closed-access in this case is understood as limited-access and not as a State secret. Similar provisions have made for concluding contracts with citizens who seek

information, in cases of closed-access information. For these limited-access pieces of information, a contract should be completed (see Chapter 3 for more analysis on some complication arising from this). The Resolution on Analysing, Storage, Placement, Updating, of Information, as well as the List of Facilities, Registry, and the Rules Governing the Updating of this Information was adopted in 2003. The Resolution on Dissemination of Information Stored in Electronic Database on Environment was approved in 2003.

Despite these positive developments, however, there is still a need for improvement in many key areas. A good example is ecological expertise. The Law on Environmental Protection defines State ecological expertise (SEE) and some areas where it applies. There are no explicit provisions on strategic environmental assessment (SEA) in the legislation, but the Law on Environmental Protection defines some strategic environmental decisions where State ecological expertise (SEE) may apply (Chapter 2). The current provisions on ecological expertise in the Law on Environmental Protection are too general and not adequately developed (Chapter 2). The development of a law on SEE would significantly boost efforts to mitigate the environmental impacts of increased growth and economic activity. Similar legislation exists in a number of industrialized countries facing similar albeit not identical environmental challenges as Azerbaijan. Utilizing existing legal best practices from these more advanced economies would be an efficient and effective way of dealing with the matter.

Similar problems with bylaws can be seen in other areas as well, for example in pasture management. Pastures belong to local authorities but are rented by farmers who are expected to use them in sustainable ways, although control mechanisms in place are not adequate. As a result, the pasture management situation has deteriorated dramatically in recent years. In yet another area, alternative energy, the intention of the legislator is that alternative energy should be encouraged, yet there are no bylaws detailing the future incentives.

The MENR website also provides useful information on secondary legislation, but it is overloaded with dated items of policy and legislation and does not always offer comprehensive and up-to-date coverage of recent developments. Adequately developed access to up-to-date and relevant primary and secondary legislation is an important component for ensuring environmental compliance and effective information.

1.4 Institutional framework and administrative capacity

The Ministry of Ecology and Natural Resources

The Ministry of Ecology and Natural Resources (MENR) was established on 23 May 2001, with responsibility for formulating and implementing environment policy, developing environmental protection measures, screening projects for potential adverse environmental impacts, monitoring implementation of environmental legislation and imposing sanctions, and administering a pollution permit system. Climate change-related functions were subsequently added in recent years.

MENR is the Designated National Authority (DNA) for participation in the Clean Development Mechanism (CDM). Its Climate Change and Ozone Center employs 20 people. The Hydrometeorology Department within the Ministry deals with climate change-related international obligations, including with greenhouse gases (GHG) inventory and preparing national communications for the United Nations Framework Convention on Climate Change (UNFCCC).

Funding for MENR has been on the rise since 2003. These increases were not associated with staff increases (at the time of the second EPR, MENR employed slightly more than 9,000 staff, including in its regional departments, as was the case in the first EPR. However, the Ministry's workload has increased considerably, mostly as a result of environment-related projects (Chapter 5). This expansion in the project portfolio creates new types of challenges for management and was one of the reasons for the establishment, in April 2009, of a section dealing with Investment, Innovation and Projects.

The structure of the Ministry consists of the central apparatus and specialized departments and has been changed at various points since the first EPR. In 2003, the structure of the Central Apparatus was reorganized as the result of the implementation of the Law on Civil Service. As a result of the 2003 restructuring of the civil Service, the Forests Development Department and the Department for Protection of Biological Diversity and Protected Areas were removed from the composition of the apparatus and started functioning as subordinate organizations.

Regional environmental departments were dissolved in consecutive orders in 2004, 2005, and 2006, reducing the number from 20–25 departments to



Azerbaijan Milli Majlis (the Parliament), Baku

12–13, primarily as a means of reducing costs. These regional departments are subordinated to MENR and their funding comes out of the State budget, through requests from MENR. They carry out similar functions as MENR with regard to environmental media, but in their own locality.

Other noticeable changes in the structure of the Ministry include the establishment in 2004 of the Section on Environmental Promotion within the Central Apparatus of the Ministry. A Microbiology Sector was established in 2006 within the National Monitoring Department and a Microbiological Research Section in 2008. In January 2007, three centers within the Department for Protection of Biological Diversity and Protected Areas were dissolved and the Center for Restoration and Clinics for Rehabilitation of the Wild Nature were established under Altiagaj National Park to enhance efficiency.

A Response Center for the Pollution of the Caspian Sea under the Environmental National Monitoring Department was created by ministerial order in 2008, as was a center under the National Monitoring Department for checking the quality of potable water along the Kura River. Following the Presidential

Decree on Tree Planting and Landscape Structure dated 13 June 2008, an Open Joint Stock Company under the Ministry was established to provide services related to tree planting. In November 2008, a Scientific and Technical Council was organized in the Environmental Center of the Ministry for the development of scientific technical information and methodology, with the aim of increasing efficiency and effectiveness in the use of natural resources and of developing environmental standards.

On 16 March 2009, the Hydrometeorological and Environmental Scientific Research Center was established to study ambient air pollution and meteorological conditions. In April 2009, a section dealing with Investment, Innovation and Projects was created.

Other institutions involved in environmental management and sustainable development

Other Government bodies play an important albeit indirect, role, including the Ministry of Agriculture, the Ministry of Economic Development, the Ministry of Education, the Ministry of Fuel and Energy, the Ministry of Health, the Ministry of the Interior, the

Ministry of Justice, and the Ministry of Transport (table 1.1). As a rule, ministries also have a Department of Environment coordinating activities with MENR, although coordination is not always effective. Within the Cabinet of Ministers, a separate section on environment was recently established, whereas before there was a Section on Environment and Agriculture.

Municipalities are responsible for water supply and sanitation activities and land use decisions within the geographic areas of their jurisdiction. The reinforcement of regional and local environmental structures remains a challenge, especially in light of the downsizing and consolidation of regional environmental departments.

When it comes to enhancing strategic planning, implementation and enforcement of environmental legislation, a major challenge facing Azerbaijan is to strengthen administrative capacity and vertical coordination between headquarters and the regional and local levels.

The institutional distribution of responsibilities is summarized in table 1.1. MENR is the main institution involved with biodiversity, forestry and fisheries (Chapter 9). It shares responsibility for the protection of the atmosphere with the Ministry of Health, which is responsible for the protection of the atmosphere, and the Ministry of Transport, which is responsible for emissions from the transport sector (Chapter 6).

MENR monitors water pollution, and is also responsible for ground water monitoring. Azersu Joint Stock Company deals with water supply and sewage systems. The Ministry of Health is responsible for water-related epidemiological and other public health issues; whereas water irrigation is covered by the Agency for Amelioration of Water Resources.

With regard to land and soil, MENR, the Ministry of Agriculture and the State Committee on Land and Cartography share responsibility. In the particularly sensitive area of pesticide use, the Ministry of Agriculture advises farmers on what types of pesticides to use, but MENR is involved in inspection because the Ministry of Agriculture does not have regional offices.

The Ministry of Emergency and MENR, through its Hazardous Waste Ltd company, share responsibility for hazardous waste (Chapter 8). The Ministry of Health deals with medical waste.

Waste management is handled by the open stock company under the Ministry of Economic Development. MENR is responsible for control and monitoring. Executive powers are responsible for transportation of waste and municipalities for the determination of landfills and the provision of containers (Chapter 8).

The Ministry of Economic Development (MED) is the lead institution for coordinating activities relating to

Table 1.1: State ministries or agencies with environmental responsibilities

Air	Ministry of Ecology and Natural Resources, Ministry of Health and Ministry of Transport
Biodiversity, Forestry, Fisheries	Ministry of Ecology and Natural Resources
Land and Soils	Ministry of Ecology and Natural Resources, State Committee on Land and Cartography, and Ministry of Agriculture
Water	MENR, Azersu Joint Stock Company, Ministry of Health, Agency for Amelioration of Water Resources, Ministry of Agriculture
Oil pollution	SOCAR, Ministry of Ecology and Natural Resources
Hazardous waste	Ministry of Emergency; Ministry of Ecology and Natural Resources; Ministry of Health
Waste	Ministry of Economic Development, Ministry of Ecology and Natural Resources, executive powers, and municipalities
Mineral resources	Ministry of Ecology and Natural Resources
Sustainable development	The Ministry of Economic Development is the lead institution for coordinating sustainable development activities. Programme components on environment are developed by MENR and submitted to MED and the Ministry of Ecology and Natural Resources
Climate change	Ministry of Ecology and Natural Resources

sustainable development. Programme components on environment are developed by MENR and submitted to MED.

In other areas of environmental significance, the Geological Service within MENR deals with mineral resources. The particularly significant area of oil pollution is dealt with primarily by the State Oil Company of the Azerbaijan Republic (SOCAR), which is responsible for cleaning up oil pollution, and MENR, which is responsible for monitoring and control functions. The Hydrometeorology Department within MENR is responsible for climate change reporting, and MENR is the DNA for the CDM mechanism (Chapter 4).

1.5 Mechanisms for integration and coordination

Azerbaijan faces significant challenges as far as the promotion of environmental protection is concerned. Key areas include air quality, management of water resources, waste management, nature protection, coastal and marine pollution, and desertification due to land use. Significant progress has been made in waste management and water quality. At the same time, integrating environmental concerns into economic and social sectors remains a key objective, which by its nature requires inter-sectoral and inter-ministerial cooperation.

The Law on Normative Acts and the Constitution provide the basis for interministerial cooperation, which takes place on two levels. The first such level is policy formulation and implementation, usually in the form of State programmes and their action plans. On the basis of the implementation of these State documents, there is usually a division of tasks and allocation of areas of responsibility to individual ministries or agencies. Subsequently, cooperation and coordination mainly pertain to reporting: collecting and compiling implementation reports.

The second level is institutional and may take two forms: the most formal, at the Cabinet of Ministers and the less formal at the interministerial level. At the interministerial level, cooperation takes place within State commissions or lower level working groups.

Working groups may be established to implement various State programmes, events of national or international importance, as well as to develop relations and joint activities with international organizations. However, experience shows that cooperation at this functional level of working groups is not widespread.

State commissions are lower than ministries in the relative institutional hierarchy. Specifically, there are three levels of executive authority. Supreme executive power rests with the President. The Cabinet of Ministers holds higher executive power, while State committees and ministries wield high executive power. In the relative hierarchy, State committees rank higher than ministries, at least in terms of protocol. State commissions are formed under the Cabinet of Ministers and are usually headed by a minister. The functioning of a State commission is regulated by its statutes. Generally, many agencies and ministries are involved, sometimes at the level of ministers or deputy ministers, all of which are separately accountable to the Cabinet of Ministers as well.

A number of State commissions exist. Among them, the State Commission for Integrated Water Management was established in 2010 (see Chapter 7). Additionally, the State Commission on Climate Change has existed since 1997; however, it has not been active since its creation (Chapter 4). The First Deputy Prime Minister chairs this, with input from MENR, MED, the Ministry of Emergencies, the Ministry of Industry and Energy, Azerenergy, a joint stock company, and the Agency for Amelioration of Water Resources. The State Commission's functioning has not met expectations, partly because of cumbersome appointment procedures that complicate that body's functioning in cases of changes of incumbents in certain governmental posts or restructuring of Government bodies.

There is no State Commission on Sustainable Development. Sustainable development issues are discussed at the Cabinet of Ministers. Although discussions at this high level may bring visibility, especially during the Year of the Environment, there is also a risk that in subsequent years, sustainable development issues may become less of a priority for Government or that more powerful ministries may gain more leverage.

1.6 Conclusions and recommendations

Environmental authorities in Azerbaijan have been considerably strengthened since the first EPR, both institutionally and in terms of funding, a trend that has been particularly evident during 2010, designated as the Year of the Environment by the President of Azerbaijan. This is a welcome development, especially when seen in perspective with regard to other countries in the region. Yet, although the number of projects managed by MENR has increased greatly since the first EPR, long-term improvements in environmental management and protection

require sound development of a policy framework that can establish continuity and predictability of national environmental policy for both domestic and international audiences.

At the time of the EPR review, core policy documents relating to the environment were either about to expire or had expired, without a clear plan or timetable that would ensure their continuity. Specifically, there is no evidence that the 2003–2010 State Programme on Environmentally Sustainable Socioeconomic Development, which enshrines the country's environmental policy, was about to be extended or updated. The draft Additional Action Plan that was prepared by MENR and considered by the Cabinet of Ministers cannot replace a coherent policy programme. Thus, the situation as regards environmental policy appears to resemble that of sustainable development, where a discontinuity existed between 2005, when the first State Programme on Poverty Reduction and Economic Development expired, and 2008, when the new State programme was adopted. The possibility of policy discontinuities and unpredictability in a core public policy area, such as that of environmental policy, is clearly not facilitating more effective long-term environmental management or protection.

Recommendation 1.1:

The Ministry of Ecology and Natural Resources should:

- (a) *Develop a national environmental policy that would succeed the one that is about to expire, with clear multiyear priorities and adequate consideration of funding and capacity needs, in order to ensure policy continuity and predictability.*
- (b) *Submit it to the Cabinet of Ministers for consideration and approval.*

The list of policy documents related to the environment that are about to expire in 2010 without clear plans for renewal, updating or extension includes the State Strategy on Hazardous Waste Management for the period 2004–2010, the Hydrometeorology Development Programme for the period 2004–2010, and the State Programme on Summer/Winter Pastures, Effective Use of Meadows and Desertification Prevention for the period 2004–2010. Furthermore, the list of expired policy documents includes the National Strategy and Action Plan on Biodiversity Conservation and Sustainable Use for the period 2006–2009 and the National Programme on Reforestation and Afforestation for the period 2003–2008. Whereas determining the usefulness of extending a specialized policy programme requires a policy decision by the

Government and MENR, the country's needs in terms of forests and reforestation are still not adequately covered, even if the situation has improved compared to the first EPR. As regards biodiversity conservation, Azerbaijan still faces formidable environmental challenges, which require policy responses that could considerably be facilitated by a policy document in these areas.

Recommendation 1.2:

The Ministry of Ecology and Natural Resources should assess the necessity of renewing, updating or extending existing policies. To better ensure policy continuity, the assessment of policy needs should be anticipatory, i.e. it should precede the completion of existing programmes and action plans, in order to give adequate time for analysis and preparation of successor policy documents.

Significant progress has been made in developing a national legislative framework since the first EPR. Although there have been improvements in terms of implementation thanks to better and more detailed secondary legislation, more can be done in certain areas. One such substantive area is that of State environmental expertise, where the framework Law on Environmental Protection is still rather general. Due to the nature of environmental issues in the country which are similar to those of industrialized nations in the West, the country can benefit by reviewing and adapting best practices from other industrialized nations.

The Ministry of Ecology and Natural Resources appears to realize the importance of developing adequately the legal framework for key environmental protection functions, as indicated by the fact that both the Comprehensive Action Plan for 2006–2010 and its successor, the Draft Additional Action Plan for 2011–2014, have devoted an entire section to improving the country's legislation. Yet implementation of the Comprehensive Action Plan in this area has not been complete.

Recommendation 1.3:

The Ministry of Ecology and Natural Resources should improve the system of secondary legislation and its implementation and ensure the full implementation of legislative improvements foreseen in the multi-year programmes that cover environmental protection and sustainable development, and their action plans.

Promoting environmental consideration to other areas of economic and social activities remains a much needed objective for guaranteeing not only sustainable development but also public health and social well-

being. However, effective intersectoral cooperation, in particular interministerial cooperation, is a prerequisite for achieving this goal. Unfortunately, there is still no State Commission on Sustainable Development that would be entrusted with strategic planning and high-level coordination of sustainable development efforts. While coordination through the Cabinet of Ministers is useful, especially through inputs in the formulation of policy and through exchanges and compilation of reports on implementation, it cannot adequately ensure that environmental and sustainable development considerations receive the required priority. Moreover, a country strategy on sustainable development has never been developed. There is no evidence that Azerbaijan is planning to develop such an instrument.

Recommendation 1.4:

The Cabinet of Ministers should:

- (a) *Consider the establishment of a high-level State Commission on Sustainable Development.*
- (b) *Appoint the members of this Commission in terms of their institutional affiliation, and not their personal capacity, to better ensure its smooth functioning in cases of reorganizations or changes of incumbency in existing ministries.*
- (c) *Appoint the Ministry of Ecology and Natural Resources as the Secretariat of this Commission.*
- (d) *Develop a country strategy on sustainable development and consider charging the State Commission on Sustainable Development with this task.*

The MENR lost overview of environmental issues in the regions due to two separate reductions of the regional environmental departments as a result of budget constraints. The regional environmental departments carry out similar functions as MENR, but in their own locality. Moreover, since 2002, the number of environmental inspectors has fallen, due to the liquidation of the State Control Inspectorate and the decline in the number of inspectors in the regional divisions of ecology and natural resources. It is therefore not surprising that the number of inspections went down after 2002.

Recommendation 1.5:

The Ministry of Ecology and Natural Resources should:

- (a) *Increase the number of regional departments in order to strengthen the work at the regional level.*
- (b) *Re-establish the State Control Inspectorate with adequate structures at the regional level in order to strengthen the work on compliance and enforcement.*

* * * * *

Those following parts of recommendations from the first EPR of Azerbaijan that are still valid, and their preceding conclusions are listed below.

While policy planning and legislation are important, overall success can only be measured through implementation. The current system of State ecological expertise is described in the 1999 Law on Environmental Protection, and it applies to a very broad range of products and services, activities and policies. In this respect, it combines both environmental impact assessment and strategic environmental assessment in a single package, with no clear differentiation between them. It is important to update the system and make it consistent with standard international practice.

EPR I -Recommendation 1.3:

The Ministry of Ecology and Natural Resources should undertake the following:

- (a) *Redesign the system of Ecological Expertise with environmental impact assessment legislation based on international experience and practices, with clear guidelines regarding screening and scoping procedures; initial steps towards decentralized decision-making in this area should be planned for the mid-term;*
- (b) *Develop separate legislation for Strategic Environmental Assessment (SEA), which applies to a higher stage of national planning and requires a higher degree of coordination.*

Chapter 2

COMPLIANCE AND ENFORCEMENT MECHANISMS

2.1 Mechanisms for compliance and enforcement of environmental policies, strategies, plans, and legislation

The main provisions on mechanisms for compliance with and enforcement of environmental requirements in Azerbaijan are provided in Chapter XI of the 1999 Law on Environmental Protection. Such mechanisms include:

- (a) State monitoring of compliance and enforcement by competent public authorities, namely competent executive branch authorities;
- (b) Self-monitoring of compliance by operators of industrial activities;
- (c) Public environmental control upon appeals and complaints by individuals and non-governmental organizations.

However, current legislation only provides detailed regulations for State monitoring of compliance and enforcement by competent authorities, including the Ministry of Ecology and Natural Resources (MENR). The provisions of the Law on Environmental Protection on self-monitoring by industrial operators and public enforcement are very short and are not developed in the secondary legislation. In general, the provisions of the environmental legislation on monitoring of compliance have not changed significantly in comparison with the first EPR carried out in 2003.

The monitoring of compliance by the environmental enforcement authorities is carried out in Azerbaijan through the following types of inspections by environmental inspectors:

- (a) Scheduled inspections of enterprises
- (b) Random inspections
- (c) Inspections upon requests by citizens and facts of non-compliance revealed through mass media

These inspections differ in terms of the reasons and procedures for their conduct. Scheduled inspections are more typical in the case of monitoring of compliance by operators of industrial activities, and the emphasis is placed on their compliance with approved emission limit values. Random inspections are conducted to detect environmental violations involving flora and fauna, in the case of protected areas and to some

extent on water objects, as well as non-compliance with emission limit values by vehicles. Inspections upon citizens' complaints are considered as the main instrument for detection of non-compliance with regard to nuisances (noise and vibration), illegal tree-cutting and other environmental violations related to construction activities in settlements, as well as improper waste disposal and collection. The findings of such inspections are set out in a standardized form approved by Order No. 418/U of the Ministry of Ecology and Natural Resources dated 1 July 2003.

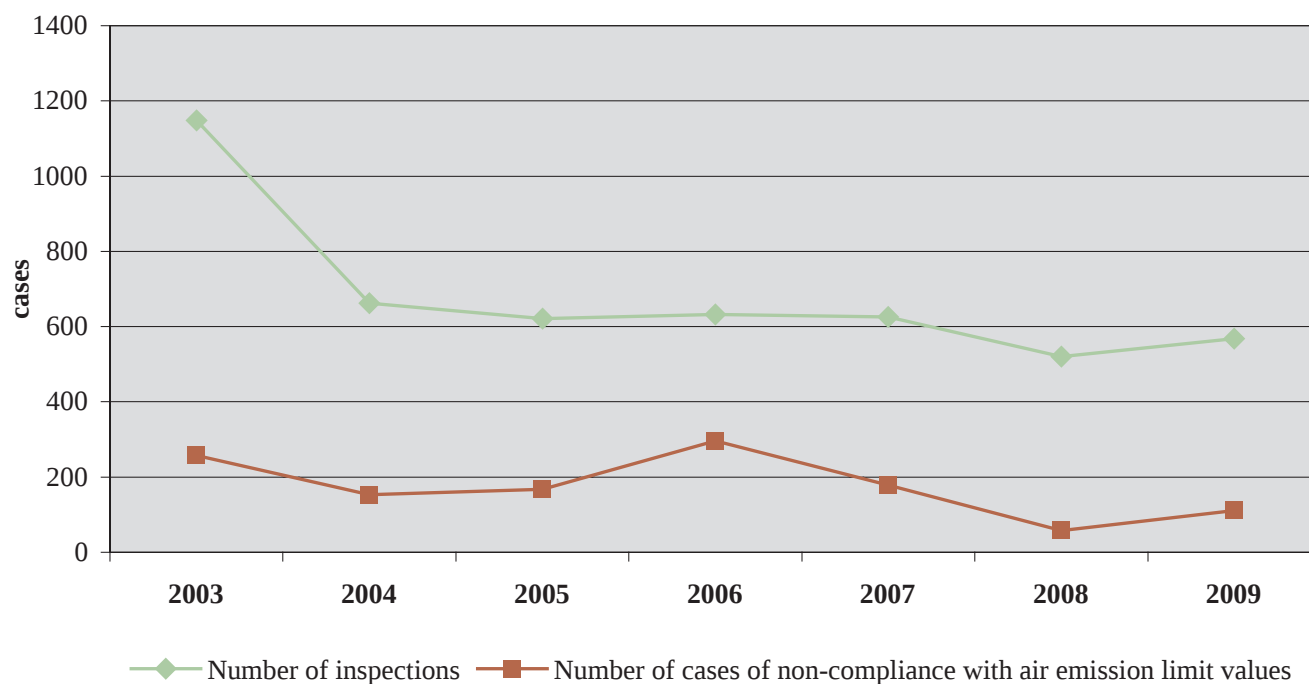
Scheduled inspections are subject to certain limitations set by the Presidential Decree No. 790 of 28 September 2002 on Prevention of Interferences Impeding the Development of Entrepreneurship. According to this instrument, any scheduled inspections of entities in the country may be held according to the schedules agreed with the Ministry of Economic Development and with mandatory involvement of its representative. In addition, certain limits are set on the number of inspections in the case of private companies. It should be noted that these restrictions led to a significant decrease in inspection checks and hindered the effectiveness of environmental inspection activity. A correlation can be seen between the drop of the number of inspections and the percentage of detected cases of non-compliance per inspection since 2003 (figure 2.1). The underlying causes of this decline are a more restricted procedure for initiating inspections and an increased burden of proof for environmental inspectors as regards the facts of non-compliance since the involvement of the Ministry of Economic Development in inspections of enterprises was made compulsory. Another drop in 2008 came during the transition to new significantly higher fines for non-compliance that entailed a disincentive for inspectors to have too many inspection checks and cases of non-compliance when fines are not likely to be collected, e.g. with small enterprises or individuals.

During the period under review, Azerbaijan also made significant changes with regard to monitoring of compliance and environmental enforcement upon citizens' requests. In 2002–2003, MENR introduced a hotline to field such requests and complaints about violations of the environmental legislation from

representatives of the general public. All citizens' complaints are entered in a special log, e.g. 280 phone calls were recorded for the first five months of 2010. Subsequently, the appeals registered are routed to the appropriate department or division of the Ministry. According to information provided in the 2009 report

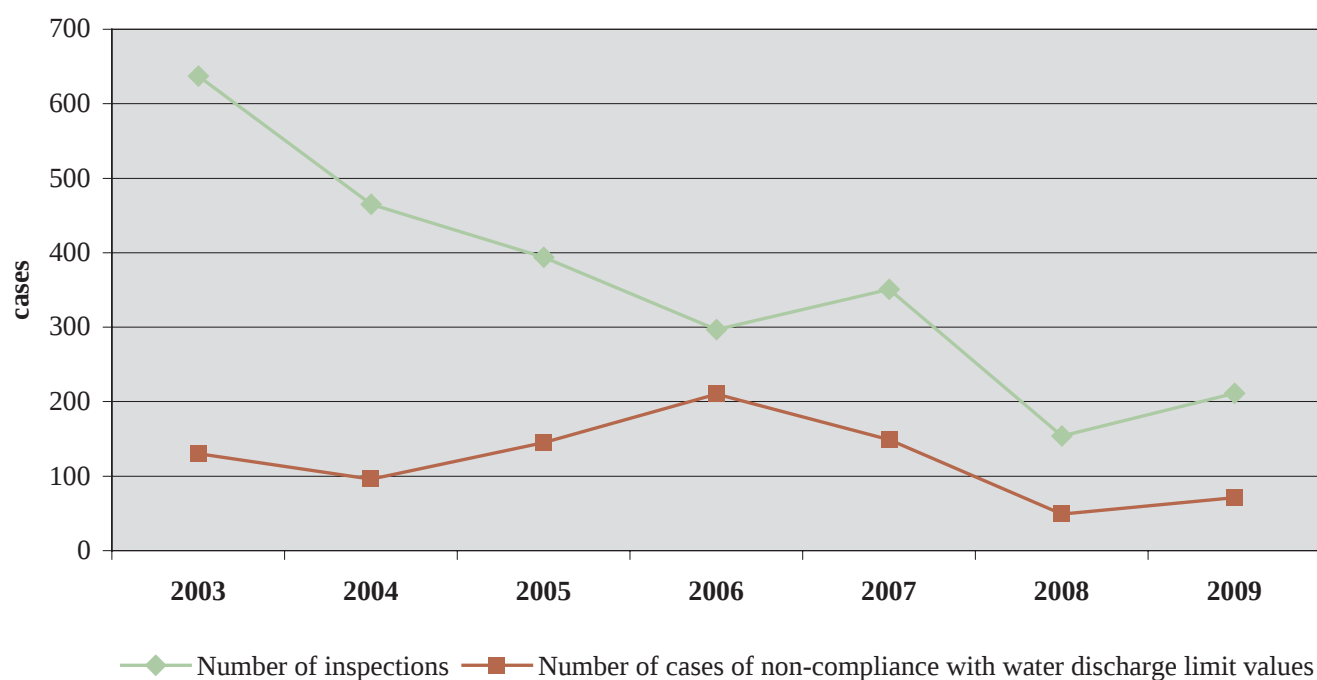
regarding the monitoring of the activity of the hotline telephone services of State bodies prepared by a number of NGOs, 28 out of 35 appeals were settled for an unidentified period in 2008. In most cases, complaints to the Ministry of Ecology and Natural Resources concern construction works in settlements,

Figure 2.1a: Effectiveness of detection of cases of non-compliance on ambient air, 2003–2009



Source: State Statistical Committee, 2010.

Figure 2.1b: Effectiveness of detection of cases of non-compliance on water, 2003–2009



Source: State Statistical Committee, 2010.

relevant nuisances (noise, vibration, dusting), as well as illegal tree-cutting and improper household waste placement, collection and combustion. The system of environmental enforcement upon citizens' requests is supervised by the presidential administration.

2.2 Enforcement tools, fines, penalties and non-compliance fees

Enforcement authorities may apply the following measures in the event of non-compliance with environmental legislation:

- (a) Administrative measures that are normally taken by environmental inspectors.
- (b) Criminal responses, which are usually limited to serious offences or instances where administrative measures have been ineffective.
- (c) Civil measures, which include monetary compensation for environmental damage caused by non-compliance.

As a rule, the response to non-compliance with environmental requirements and standards is considered via administrative procedures, since this the shortest and most cost-effective approach. Accordingly, administrative sanctions are applied in most instances when non-compliance has been detected by environmental inspectors. In certain cases, however, the enforcement authority may decide to send the documents to a police or prosecutor's office for the initiation of criminal prosecution and/or to lodge a claim with a court for compensation for environmental damage.

In some cases, responsibility for the application of enforcement tools for certain environmental offences in Azerbaijan is distributed among different enforcement authorities. For example, inspectors of local police offices are entitled to impose fines for non-compliance with legislation on the protection of aquatic biological resources, while the inspectors from the Department for Reproduction and Protection of Aquatic Bioresources may lodge claims with the courts concerning compensation for environmental damage inflicted by non-compliance.

According to the Criminal Code, criminal sanctions for non-compliance with the environmental legislation may include the following:

- (a) Fines
- (b) Deprivation of the right to hold a certain position or engage in certain activities
- (c) An obligation to engage in public works
- (d) An obligation to engage in correctional works
- (e) Imprisonment

Criminal sanctions are rarely applied for environmental violations, usually only for illegal fishing and hunting with significant damage to the environment, namely in the amount of 400 manat (about US\$ 500) and above. One reason for this is that the application of criminal liability is limited to individuals, which does not allow its use in cases involving violations committed by legal entities.

Azerbaijan relies on a very limited set of types of administrative sanctions for environmental offences, and environmental inspectors may impose a fine in the majority of cases. In addition, in the event of systematic violations of hunting regulations, an offender may be deprived of the right to hunt for a period of six months to two years. Fines for administrative offences are fixed in manat and set by the Code on Administrative Offences of 11 July 2000 bearing the No. 906-IQ. It provides variable administrative fines for most environmental violations that may vary, however, only within a specified interval. Moreover, the amounts vary for physical persons, officials and legal entities, and unified sizes of fines for all persons are applied only for a few environmental administrative offences. In accordance with the amendments of 6 November 2007, administrative fines were increased dramatically, in most cases by a factor of several dozen, and in some cases even a hundredfold. It is not thus surprising that the introduction of new sizes of fines led to a significant increase in the period 2008–2009 in the amounts of administrative fines collected for environmental offences. Figure 2.2 shows such trends for amounts of administrative fines collected for non-compliance with requirements relating to the protection of land, water, ambient air and protected areas. As far as land protection and water protection are concerned, the corresponding fines were reduced somewhat in 2009 after the steep rises in 2008, whereas the increase was more gradual with regard to ambient air protection and protected areas.

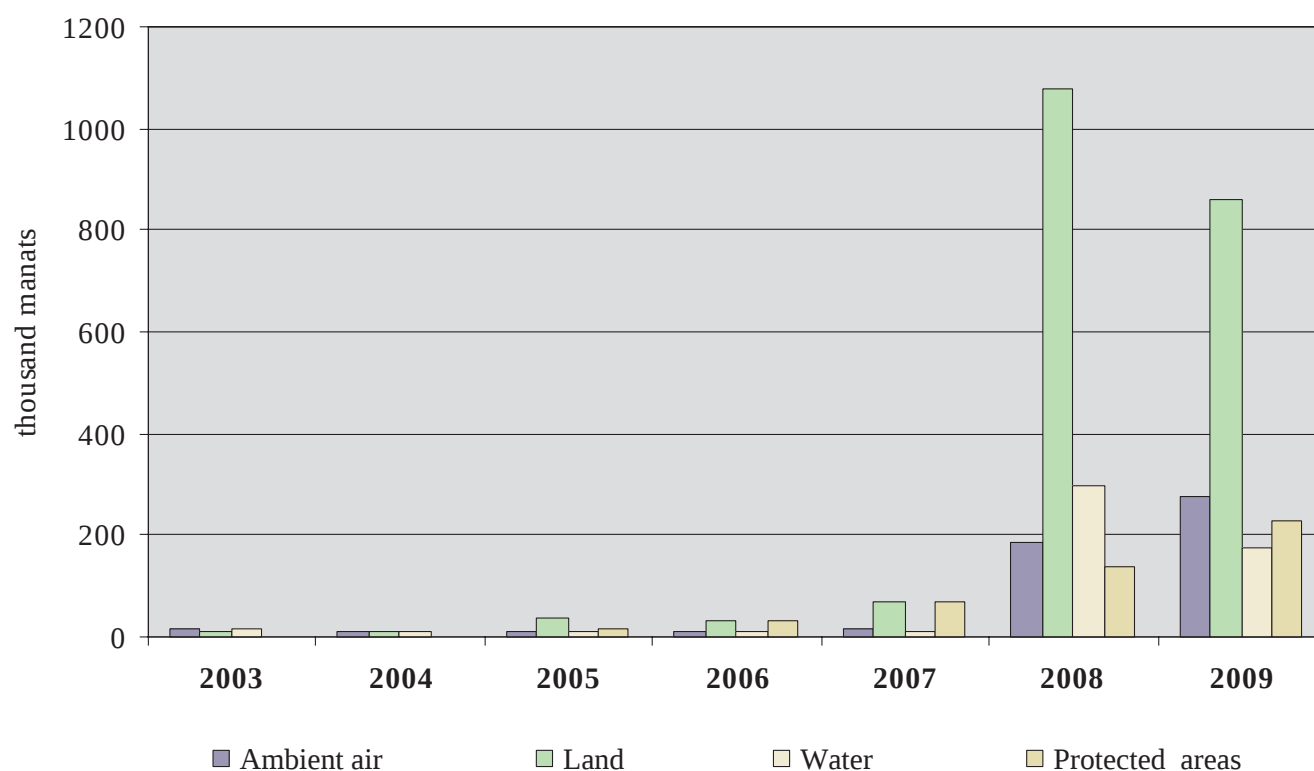
On the other hand, the number of cases of decisions concerning the imposition of administrative fines that were appealed increased rapidly in the period 2008–2009. According to information provided by the Department for Environmental Protection, in certain periods some 80 per cent of decisions on environmental administrative offences were appealed. There is no doubt that the legislative amendments of 6 November 2007 were intended to ensure the deterrent effect of administrative fines. Yet international practice shows that such extremely high fines are usually applied for repeated or regular environmental administrative offences and often follow a number of non-repressive measures (warning letters, formal admonitions, etc.),

whereas in Azerbaijan they are applied immediately once non-compliance is established. As a result, the deterrent effect of fines often relies on the threat of stringent financial measures to prevent non-compliance rather than on the immediate punishment of any person involved. Also, it may concern areas where individuals with low incomes tend to be the main offenders, e.g. poaching or illegal tree-cutting, and where the offender's low income may preclude the imposition of such high administrative fines.

According to the Code on Administrative Offences, the minimum fines for individuals for non-compliance with environmental requirements start at approximately 300-400 manat, with lesser fines imposed for violations of land use and use of water resources. For example, extremely high fines are set for

individuals as regards common offences in Azerbaijan such as violations of the regime of specially protected natural territories (400-600 manat), illegal damage or cutting of one tree or one shrub during construction in settlements (1,200-1,500 manat), non-compliance with the standards for vibration and noise, or adverse impacts on the environment and human health (300-800 manat). Secondly, in the case of legal entities, the new fines are often too high for small enterprises but they can be insufficient to compel large companies to make the necessary environmental investments. Table 2.1 shows minimum and maximum possible amounts of fines for individuals, officials and legal entities as set by Chapter 9 of the Code on Administrative Offences with regard to violations of the rules on environmental protection, nature use and environmental safety.

Figure 2.2: Administrative fines collected for environmental offences, 2003–2009



Source: State Statistical Committee, 2010.

Table 2.1: Minimum and maximum fines for environmental administrative offences

	Individual	Official	Legal entity
Minimum possible fine	5	30	30
Maximum possible fine	2,500	10,000	50'000

Source: 2000 Code of Administrative Offences N 906-IQ with amendments until 19 March 2010.

Another problem is the proportionality of fines for administrative offences. For example, the highest fines for legal entities range from 40,000 to 50,000 manat for cutting or damaging trees or shrubs outside forests, while enterprises that do not comply with environmental requirements or operate without treatment facilities can be fined from 7,500 to 10,000 manat. In addition, a comparison of the data on the amounts of fines and environmental damage compensation in tables 2.2 and 2.3 shows that the amounts of compensation for damages constitute only a small portion of the amounts of fines, namely one per cent for 2008–2009. The only exception in this respect is in the case of compliance with requirements concerning the protection of aquatic bioresources (table 2.6), where the amount of compensation for environmental damage still exceeds the amount of administrative fines for non-compliance. This sends another signal to the Government about lack of proportionality in the toolkit of sanctions used in Azerbaijan to bring the regulated community into compliance with environmental requirements.

2.3 Environmental enforcement

MENR remains the key environmental enforcement authority in Azerbaijan, and its relevant functions have been expanded slightly in comparison with 2003. Since 2005–2006, it has been conducting monitoring of compliance with hunting requirements, which was previously the purview of the Association of Hunters. Among other competent authorities dealing with inspections and environmental enforcement functions are the Ministry of Interior Affairs, the Ministry of Health and the Ministry of Emergencies. In certain areas, MENR shares responsibility for monitoring compliance and enforcement with these ministries: this concerns random inspections of air emissions and noise by vehicles, which are carried out jointly with the Chief Administration of Road Police of the Ministry of Interior and on fishery with local police offices. Based on Presidential Decree No. 52 of 13 February 2009, monitoring of compliance with noise and vibration standards is carried out by the Ministry of Health and MENR from 6 a.m. till 11 p.m. and by the police offices from 11 p.m. till 6 a.m. In 2005, the Ministry of Emergencies was established in Azerbaijan. Its competencies cover the issues of prevention and control of industrial accidents threatening the environment and human health. The State Agency on Supervision on Safety in Construction and the State Agency on Safety in Industry and Mining deal with these issues under the Ministry of Emergencies. The number of environmental inspectors has fallen in comparison with 2002, due to the liquidation

of the State Control Inspectorate and the decline in the number of inspectors in the regional divisions of ecology and natural resources. It is therefore not surprising that the number of inspections of air and water went down after 2002.

Currently, the Department for Environment Protection (DEP) is the key body dealing with inspection and enforcement functions within the Ministry of Ecology and Natural Resources. It is responsible for monitoring compliance with legislation on the protection of air and surface water. In addition, its inspection and enforcement activities cover the legislative requirements for land protection and waste management. DEP structures include sectors on monitoring of compliance with environmental legislation, protection of ambient air, protection of surface water, and hazardous waste. On the territorial level, the functions of monitoring of compliance by operators with environmental requirements concerning ambient air, water and waste are fulfilled by inspectors of the divisions for ecology and natural resources; for instance, the Baku Department consists of 10 such inspectors.

During the period under review, DEP inspection and enforcement activity concerning air protection focused on monitoring compliance with approved emission limit values by stationary sources of air pollution. However, as mobile sources of air pollution grow rapidly, so do their emissions. Although such sources are subject to random inspections, these have not been effective so far because of a lack of political will to deal seriously with increased imports and the utilization of old and outdated vehicles. However, the situation may change with the adoption by the Cabinet of Ministers of Resolution No. 46 of 6 March 2010 which envisages a transition to the Euro - 2 standard as from 1 July 2010. In addition, the total number of inspections to monitor compliance with air protection requirements fell by half in 2009 when compared with 2003 (table 2.2). One reason for this is the significant reduction, in 2004, in the number of environmental inspectors at the Ministry of Ecology and Natural Resources. At the same time, during the period 2005–2006 the efficiency of detection of cases of non-compliance with air protection requirements increased, but later reverted to the 2003–2004 level, i.e. around 20 per cent of established cases of non-compliance per 1 inspection check. Consequently, the efficiency of inspections initially increased in the following years but then subsequently declined. This shows that the structural changes of 2003–2004 had only temporary positive effects on the efficiency of inspection activities.

Enforcement of water protection requirements is handled by DEP. Its activities focus on monitoring compliance with approved discharge limit values of pollutants with wastewaters. The number of inspections in this area declined threefold in 2009 in comparison with 2003 (see table 2.3) as a consequence of the significant reduction in the number of environmental inspectors in 2004. The amount of fines for all types of environmental administrative offences, including non-compliance with legislation on water protection, increased significantly in the period 2008–2009 as a result of the amendments to the Code of Administrative Offences in September 2007. In this regard, the statistical data on environmental enforcement on water protection (table 2.3) provides clear evidence of a disincentive for environmental inspectors to

claim environmental damage compensation after administrative fines skyrocketed at the end of 2007. The environmental damage compensation collected amounted to 400 manat in 2009 as compared to 51,000 manat in 2007. It should be mentioned that similar tendencies can be seen with the amounts of environmental damage compensation collected for non-compliance with the requirements on air protection and land protection (tables 2.2 and 2.4).

DEP also conducts inspection and enforcement activities with regard to legislation on land protection, including the requirements concerning the environmentally sound treatment of industrial and household waste. Unfortunately, the relevant statistical data (Table 2.4) are not detailed, making a full-fledged

Table 2.2: Compliance with and enforcement of legislation on air protection, 2003–2009

	2003	2004	2005	2006	2007	2008	2009
Number of accidental pollutant releases into water	1.0	3.0	..	..	..	..	..
Number of inspections	637.0	465.0	394.0	297.0	351.0	154.0	211.0
Number of cases of non-compliance with water discharge limit values	130.0	96.0	145.0	210.0	149.0	49.0	71.0
Percentage of non compliance	20.0	21.0	37.0	71.0	42.0	32.0	34.0
Number of offenders administrative liability for non-compliance with water law was imposed on	171.0	163.0	141.0	210.0	149.0	48.0	71.0
Amount of fines, thousand manats	14.3	10.3	11.2	10.2	9.4	295.9	175.4
Collected damage compensation for non-compliance on water protection, thousand manats	1.6	203.2	29.7	23.3	50.9	2.6	0.4

Source: State Statistical Committee, 2010.

Table 2.3: Compliance with and enforcement of legislation on water protection, 2003–2009

	2003	2004	2005	2006	2007	2008	2009
Number of accidental pollutant releases into air	..	3.0	1.0	..	..	..	..
Number of inspections	1,148.0	662.0	621.0	632.0	626.0	520.0	568.0
Number of cases of non-compliance with air emission limit values	257.0	153.0	168.0	296.0	179.0	58.0	111.0
Percentage of non compliance	22.0	23.0	27.0	47.0	29.0	11.0	20.0
Number of offenders administrative liability was imposed on	271.0	131.0	172.0	296.0	179.0	52.0	111.0
Amount of fines, thousand manats	13.7	8.3	11.8	12.5	16.3	187.9	276.7
Collected damage compensation for non-compliance on air protection, thousand manats	7.3	6.0	21.7	19.2	9.7	34.4	2.2

Source: State Statistical Committee, 2010.

assessment of the performance of the environmental inspectors in this area more difficult. The amounts of fines and damage compensation for non-compliance with the legislation on land protection significantly increased compared to 2003 while the number of cases of non-compliance has fluctuated, peaking in 2007. The drop in the numbers of inspections in 2008–2009 provides additional evidence that environmental inspectors have managed to reduce the number of inspections since the new stiffer fines were phased in at the end of 2007. Thus, the number of environmental inspections in Azerbaijan depends on the amount of fines inspectors expect to collect for the Environmental Fund managed by MENR (Chapter 5). Moreover, a comparative analysis of the statistical data on amounts of fines and environmental damage compensation for biodiversity, air and water shows that the enforcement of land protection requirements is the main source for revenue collection as far as the Environmental Fund is concerned.

The functions of the inspectorates and enforcement authorities with regard to protection of flora, fauna and protected areas are combined in MENR with the functions of regulation of their use. Each department responsible for the use and protection of certain

natural resources (forestry, fishery, protected areas) has a special sector dealing with the supervision of compliance with the relevant legislative provisions. With the Department of Biological Diversity Protection and Specially Protected Nature Areas Development, it is the responsibility of the sector for the control of legislation on conservation of biodiversity and inspectors of protected areas. Within the structure of the Forestry Department, it is the responsibility of the sector on supervision of compliance with the forest legislation. Finally, the Department of Reproduction and Protection of Aquatic Bioresources has the inspectorate on protection of aquatic bioresources with four regional divisions.

Data on the inspection and enforcement activity by the Department of Biological Diversity Protection and Specially Protected Nature Areas Development for the period 2005–2009 are provided in table 2.5. Unfortunately, the data for the period 2003–2004 are not available due to the reorganization of the authority in question during that period. Moreover, the competency of this Department was expanded in the period 2005–2006 to cover monitoring of compliance with and enforcement of hunting requirements. As a result, such performance indicators of its activity as

Table 2.4: Compliance with and enforcement of legislation on land protection, 2003–2009

	2003	2004	2005	2006	2007	2008	2009
Number of offenders administrative liability for non-compliance was imposed on	233.0	322.0	706.0	744.0	922.0	477.0	422.0
Amount of fines, thousand manats	12.1	13.1	39.1	31.2	66.8	1,078.3	859.3
Collected damage compensation for non-compliance on land protection, thousand manats	1.8	106.1	31.6	68.0	94.1	131.9	13.1

Source: State Statistical Committee, 2010.

Table 2.5: Compliance with and enforcement of legislation on conservation of biodiversity and specially protected natural areas, 2005–2009

	2005	2006	2007	2008	2009
Number of cases of non-compliance	135	149	348	431	698
Amount of fines and damage compensations, thsd. manats	16.7	33.7	71.4	137.8	228.7
Confiscated guns	5	11	32	41	25
Confiscated boats		3	9	6	37
Considered through administrative review procedure	101	112	301	339	633
Number of initiated criminal proceedings	20	26	22	25	25

Source: Department of Biological Diversity Protection and Specially Protected Nature Areas Development of the Ministry of Ecology and Natural Resources, 2010.

the number of detected cases of non-compliance and the amount of fines and damage compensations have risen steadily since 2005. In addition to administrative fines and claims for environmental damage, the Department of Biological Diversity Protection and Specially Protected Nature Areas Development has relied heavily on criminal prosecution of offenders.

The Department of Reproduction and Protection of Aquatic Bioresources carries out the compliance monitoring and enforcement functions together with local police offices. The latter is entitled to impose administrative fines for non-compliance with the legislation on protection of aquatic bioresources, while the above MENR department is responsible for claiming environmental damage compensation. Table 2.6 provides data on the use of enforcement tools by both authorities. Here, it should be mentioned that criminal prosecution is used quite actively in this area. In addition, special attention should be paid to the fact that the number of criminal proceedings initiated has risen sharply from 13 cases in 2006 and 17 cases in 2007 to 77 cases in 2009. One of the possible reasons for this is the disproportionateness of criminal and administrative sanctions in the case of illegal fishing and illegal hunting of water animals by individuals. The corresponding criminal sanctions remain quite low (100-1,000 manat), whereas the amounts of administrative fines increased sharply in September 2007 (700-1,700 manat) and are more severe at the moment.

Currently, Azerbaijan lacks a strategic approach for ensuring compliance with environmental requirements and standards. Certain short-term priorities in this area are set via ad hoc decisions by the President and Cabinet of Ministers. For example, on 4 July 2008, Presidential Decree No. 792 on application of the Law on Automobile Transport was adopted. This order sets, inter alia, requirements on monitoring compliance with environmental requirements relating to noise and air emissions while licensing vehicles used for public transportation. In 2008–2009, presidential decrees set the standards for vibrations and noise in residential and public buildings and the competencies of MENR, the Ministry of Interior Affairs and the Ministry of Health to monitor compliance and enforce these standards. Also on the level of presidential decrees, in 2007 and 2008 priorities were set for compliance assurance with regard to the discharges of industrial and household wastewaters into the Caspian Sea.

2.4 Assessment tools

State ecological expertise and environmental impact assessment

The legislative frameworks for State ecological expertises (SEEs) and environmental impact assessments (EIAs) have not changed in Azerbaijan in comparison with 2002. SEEs are conducted by the MENR State Expertise Administration on the basis of the general provisions of Chapter VII of the Law

Table 2.6: Compliance with and enforcement of legislation on protection of aquatic bioresources, 2003–2009

	2003	2004	2005	2006	2007	2008	2009
Number of established cases of non-compliance	72.0	160.0	204.0	215.0	240.0	165.0	127.0
Number of persons liability for non-compliance was imposed on	72.0	165.0	206.0	204.0	226.0	146.0	104.0
Number of administrative offences	24.0	136.0	141.0	185.0	166.0	61.0	4.0
Number of civil suits considered by courts of first instance	32.0	37.0	40.0	20.0	42.0	20.0	18.0
Number of initiated criminal proceedings	16.0	21.0	13.0	13.0	17.0	21.0	77.0
Amount of imposed fines, thsd. manats	0.7	1.7	2.3	2.7	2.7	2.3	10.4
Amount of claimed environmental damage compensation, thsd. manats	15.2	19.7	30.5	39.2	35.7	36.0	47.3

Source: Department for Reproduction and Protection of Aquatic Bioresources of the Ministry of Ecology and Natural Resources, 2010.

on Environmental Protection. The application in Azerbaijan of the EIA instrument is still based on the 1996 Handbook for the EIA process, which is being approved by the State Committee of Ecology and Control of Nature Use and is not a legally binding document. Consequently, EIAs are not mandatory under domestic legislation. In this regard, the Environmental Centre under MENR has developed a draft Law on Environmental Expertise and draft Regulations on environmental impact assessments, which are currently undergoing the procedure of approval by various ministries. However, it is still not clear if and when those drafts will be approved.

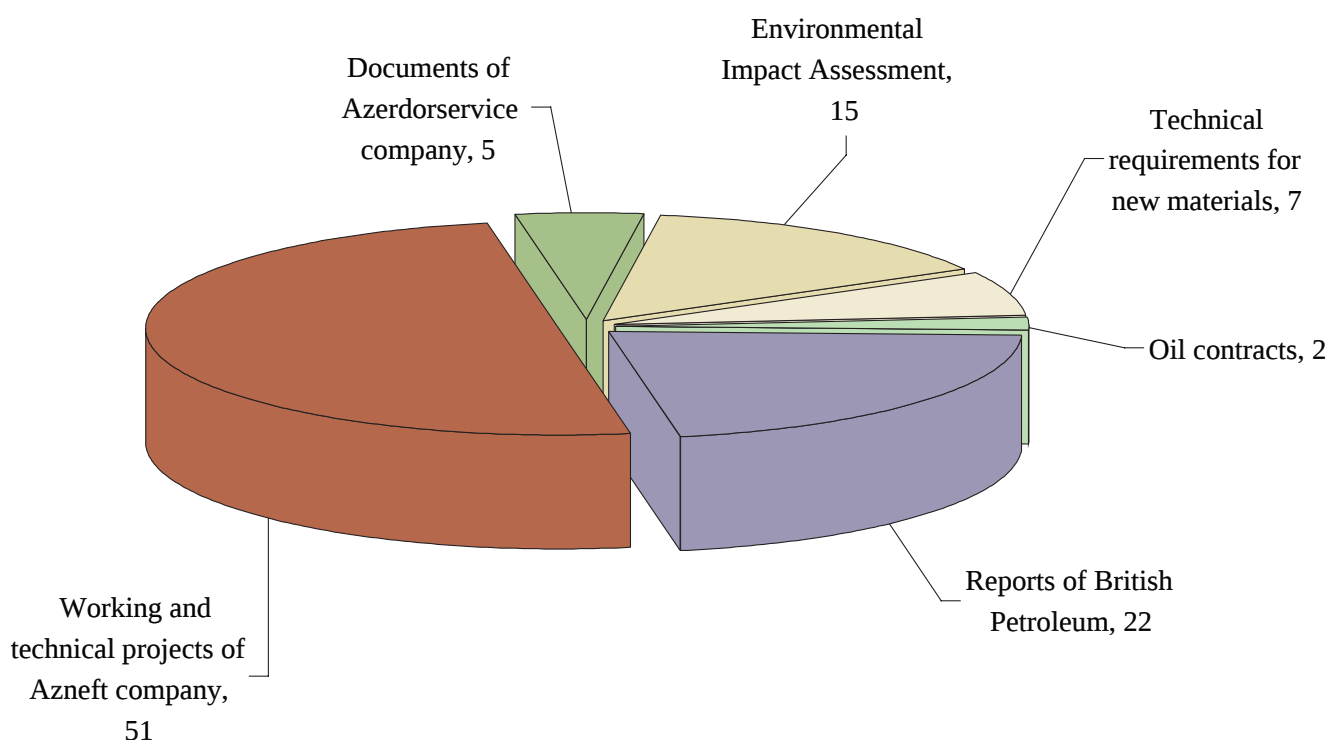
According to information provided by the Sector of Expertise of Projects and Environmental Impact Assessment of the State Expertise Administration, the annual number of SEE reviews is around 80–100. In 2009, the State Expertise Administration provided conclusions of SEEs on 102 documents. A breakdown by document type is presented in figure 2.3. EIA documentation is one of the types of documents subject to review via SEE in Azerbaijan.

Article 54 of the Law on Environmental Protection defines various documents as the subject matter of SEEs, including those on public and private projects involving construction and modernization, new

equipment, technologies and materials. As can be seen from figure 2.3, in practice, SEEs are applied to a broader range of documents, including oil contracts and reports on environmental performance by some large companies. In many cases, it is unclear how it can be determined, on the basis of existing legislative provisions, whether or not a project or document is subject to an SEE, and it would appear that such decisions are often made at the discretion of the State Expertise Administration. SEEs are extremely centralized, and all the issues related to them and to project EIAs are decided directly by the State Expertise Administration in Baku. However, there are only six employees in its Sector of Expertise of Projects and Environmental Impact Assessment, which is one of the major obstacles to more active development of EIAs in Azerbaijan.

According to information provided by the State Expertise Administration, screening of projects to determine whether they are subject to the EIA procedure is done on the basis of the project classification by the World Bank, namely its categories of projects A and B. NGO representatives interviewed noted that projects financed by international financial institutions or implemented by large multinational companies as well as some large projects by local companies undergo the EIA procedure. Also according to them, in many cases such projects are not subject to full

Figure 2.3: Types of projects and documents subject to State ecological expertise, 2009



Source: Sector of Expertise of Projects and EIA of State Expertise Administration of the Ministry of Ecology and Natural Resources, 2010.

EIA and are not followed by notification of the public and the public participation procedure as required by the Aarhus Convention. However, MENR considers its practice of EIA for public and private projects to be consistent with the requirements of the relevant UNECE legal instruments, namely the Aarhus and Espoo Conventions.

In 2009, the EIA procedure was applied to 15 projects of economic activity, most of which concerned the construction or modernization of highways and motorways. In addition, an EIA was conducted on the oil project Chyrag-2 and the projects for the construction of an incinerator in Balakhany, a glucose production plant in Oguz, a salt production plant in Masazyr, the modernization of the cement plant in Garadag, and the construction of the “Fiery Towers of Baku”. It should be noted that data analyses showed that in most cases, final decisions on the siting of those facilities and projects were approved before the EIA was conducted and some facilities were already under construction while the EIA was being carried out, e.g. the salt production plant in Masazyr or the glucose production plant in Oguz. This is due inter alia to the lack of legally binding provisions on EIAs in current legislation and to the fact that the EIA procedure is not incorporated into the decision-making system for public and private projects with a potentially significant environmental impact.

According to Resolution No. 42 of the Cabinet of Ministries dated 15 March 2000, MENR should also take part in decision-making concerning the provision of plots for the construction of industrial facilities, railways and highways, energy transmission facilities and pipelines. However, due to the centralized nature of the decision-making process, the role of MENR is limited in many cases to setting some environmental requirements regarding the use of a plot of land for a given project. Moreover, in cases providing municipal lands for such goals, according to Law No. 274-IIQ of 15 March 2002 on approval of the Regulations on Rules for preparation and agreement on documents related to providing municipal lands, MENR representatives are not entitled to participate in decision-making.

As regards the public participation requirements of the EIA procedure, current national legislation does not guarantee the public such rights. The Law on Environmental Protection indicates a possibility for representatives of the general public to participate in SEE reviews on large projects by involving them in special SEE expert commissions. According to the State Expertise Administration, this is deemed to

be one option for public involvement, since public hearings are conducted only on a limited number of projects subject to the EIA procedure. In general, public participation in EIA remains an issue decided at the discretion of the developers of planned activity with a potentially significant environmental impact, because they are not obliged by current national legislation to do so.

Strategic environmental assessment

There are no explicit provisions on strategic environmental assessments (SEAs) in legislation, but Article 51 of the Law on Environmental Protection defines some strategic environmental decisions as subject to SEE review. This requirement relates to State and local programmes related to development, documentation on development of sectors of the economy, and methodological and normative-technical documentation concerning environmental protection. According to the State Expertise Administration, at least two programmes on the social and economic development of regions of Azerbaijan were subject to SEE review, but no such practice was foreseen in draft legislation.

Environmental audits

Environmental audits are not actively applied in Azerbaijan either, despite the existence of relevant provisions under Chapter XII in the Law on Environmental Protection. In general, this instrument is used by large foreign companies working in the country or companies financed by international financial institutions.

Environmental licensing

There are no provisions on environmental licensing in domestic environmental legislation. The Report on the Assessment of the Effectiveness of the Environmental Impact Assessment (EIA) System in Azerbaijan published by the Caucasus Environmental NGO Network in 2004 raised the point that “there is no system of EIA expert licensing in the country, although the practice of participating in EIAs as independent consultants is becoming more common, especially among representatives of NGOs and academia”. However, the Ministry of Ecology and Natural Resources has not developed the legislative basis for issuing such licenses so far.

There is a system of licensing in Azerbaijan dealing with safety issues in industry, mining, construction, tourism, public transportation, etc. However,



Government House on Azadlig square, Baku

environmental aspects are not a part of relevant licensing requirements, and MENR is not involved in the issuance of the relevant licenses.

2.5 Compliance assurance

Monitoring and reporting

In Azerbaijan, the prevalent approach is that the monitoring of compliance with environmental requirements and standards as well as the inspections conducted for that purpose are mainly viewed as an administrative barrier hindering the economic development of the country. Accordingly, in the early 2000s a regime was introduced that consisted of certain restrictions and control of inspections of enterprises by the Ministry of Economic Development, including those conducted by environmental inspectors. On the other hand, in 2008 extremely high fines for many types of administrative offences were established with a view to deterring potential perpetrators.

Thus, in general, Azerbaijan considers very stringent monetary penalties as sufficient tools for compliance assurance. The use of a non-repressive response by environmental inspectors is not foreseen in legislation,

the only exception being non-compliance with the legislation on environmental education and public awareness stipulated by Article 84-1 of the Code on Administrative Offences. In the majority of cases, upon detection of an environmental violation the competent authority should, as a rule, impose an administrative fine and if necessary take steps to ensure its collection. In addition, it should claim compensation for the environmental damage inflicted by non-compliance. Moreover, the use of a non-repressive response in many cases would raise certain concerns as to possible corruption involving environmental inspectors, since they would have the discretionary power to decide whether or not to impose a fine on an offender. Another factor encouraging inspectors to opt for fines is that performance assessment of the environmental enforcement authorities in Azerbaijan is based on the number and amount of fines imposed and collected by them.

Assistance in and facilitation of compliance

Meanwhile, a different approach based on facilitation of compliance was practised with regard to discharges of pollutants into the Caspian Sea, where public funds are allocated for the construction of wastewater

treatment facilities. In this instance, in accordance with Presidential Decrees No. 2244 of 20 June 2007 and No. 2867 of 13 June 2008, the requisite financial resources were allocated out of the President's Reserve Fund. The results of monitoring the state of the Caspian Sea, conducted by the Caspian Complex Environmental Monitoring Administration, serve as a basis for the allocation of such funding. The monitoring data are published in periodic bulletins, which, together with proposals to address problems identified with regard to Caspian Sea pollution, are sent to 14 Government agencies. In this case, however, activities on compliance assurance are conducted by a department of the Ministry of Ecology and Natural Resources dealing with monitoring of the environment rather than enforcement.

There is a lack of progress with regard to promotion of better compliance via the provision of information on environmental performance by industries to a broader public. This concerns not only such advanced instruments as the pollutant release and transfer registers (PRTRs) and eco-certification for ecotourism or sustainable tourism. Furthermore, MENR does not have its own information or reporting system for regular dissemination of information on established cases of non-compliance and sanctions imposed for non-compliance. As a result, information on specific cases of non-compliance and the environmental measures is usually not revealed.

Even a significant share of the basic information derived from monitoring, inspections and enforcement is not available to the general public. Part of this information, namely periodic summary reports on the monitoring of compliance with and enforcement of the requirements for the protection of ambient air, water and land by the Department for Environmental Protection, is submitted to the State Statistical Committee. These data are collected through the statistical reporting form "1 – environmental protection" and made available to the general public in publications and on the website of the State Statistical Committee. However, the summary data on the inspection and enforcement of the legislative requirements relating to protection of flora and fauna, including forests and specially protected natural areas, are not covered by the statistical reporting.

2.6 Promotion of environmental management systems in enterprises

According to the 2008 ISO Survey of Certifications, 21 companies in Azerbaijan were ISO 14001:2004 certified. At the same time, national

public authorities are not active in the promotion of environmental management systems (EMS) in enterprises. There is no established system of incentives encouraging domestic industries to adopt ISO standards. However, the MENR Environmental Centre is giving thought to working more actively in this area in the near future. Also in 2010, a number of national standards that are equivalent to the following ISO standards on environmental management will be developed and submitted for further approval by the State Agency of Standardization, Metrology and Patents:

The national standards will be similar to the following ISO standards on environment management:

- (a) ISO 14031-2001 : Environmental performance evaluation – Guidelines;
- (b) ISO 14040-99 : Life cycle assessment. Principles and framework;
- (c) ISO 14041-2000 : Life cycle assessment - Goal and scope definition and inventory analysis;
- (d) ISO 14050-99 : Vocabulary.

However, neither ISO 14001 Environmental management systems—Requirements with guidance for use nor ISO 19011 Guidelines for quality and/or environmental management systems auditing are being considered for approval as national standards in Azerbaijan.

2.7 Enforcement of emission standards

Monitoring of approved emission standards is the main priority for environmental inspectors in Azerbaijan with regard to enforcement of legislation on the protection of ambient air and water objects. This trend has become increasingly pronounced since 2006, when the number of cases of non-compliance with emission limit values was almost equal to the total number of cases of non-compliance (tables 2.2 and 2.3). As a rule, enforcement of emission standards is carried out on the basis of scheduled inspection checks, on the strength of the information revealed through appeals and complaints by individuals and environmental non-governmental organizations or publication in the mass media.

Non-compliance with emission standards is subject to administrative liability according to article 76 of the Code on Administrative Offences, which sets the following sizes of fines for non-compliance with approved air emission limit and water discharge limits:

- (a) From 2,500 manat to 4,000 manat for officials;
- (b) From 7,500 manat to 12,500 manat for legal entities.

In certain cases, e.g. those involving impacts on human health and the death of individuals, significant harm to fauna, flora, fishery, forestry or agriculture or massive death of animals, criminal sanctions can be applied for non-compliance with emission standards leading to pollution of ambient air, water and marine environment. Fines foreseen by the Criminal Code for such environmental crimes are less than the above administrative fines and that in practice, non-compliance with emission standards never leads to criminal prosecution in Azerbaijan.

2.8 Conclusions and recommendations

Despite the fact that some projects have undergone the EIA procedure in Azerbaijan, there are no specific provisions on environmental impact assessments in national legislation. What is more, the criteria for determining whether or not a project is subject to SEE and an EIA by the State Expertise Administration of the Ministry of Ecology and Natural Resources remain very obscure. Moreover, the decision-making processes concerning SEEs and EIAs are extremely centralized in the country, while the sector dealing with those issues and based in Baku is understaffed. All these factors impede promotion of EIAs in the country. SEAs are also used sometimes in Azerbaijan, but national legislation does not contain any specific regulations in this context.

The first Environmental Performance Review of Azerbaijan already made a recommendation to the Ministry of Ecology and Natural Resources to modernize the system of ecological expertise and EIA-related legislation in accordance with international experience and practices. It put special emphasis on the needs to provide clear guidelines with regard to screening and scoping and to take the initial steps towards more decentralized decision-making in this area. In addition, it required Azerbaijan to develop national legislation on SEAs. The above recommendations have become even more important and timely in view of the current level and pace of economic development in Azerbaijan, as the number of public and private projects subject to EIAs is growing and decisions on many important aspects of these projects related to the environment are being made on the level of strategic documents.

Recommendation 2.1:

- (a) *The MENR should ensure that provisions on EIA and SEA are based on international acknowledged practices and are adequately developed and reflected in the draft Law on Ecological Expertise,*

- (b) *The Cabinet of Ministers should accelerate the procedure of approval of the draft Law on Ecological Expertise and submit it to the Parliament for further consideration.*

See below EPR-I Recommendation 1.3

To date, there is still no unified environmental enforcement strategy in Azerbaijan. As discussed above, some short-term priorities in this area are identified by certain ad hoc decisions by the President and Cabinet of Ministers, e.g. on water discharges into the Caspian Sea in 2007 and 2008, nuisances (noise and vibration) in 2008 and 2009, and air emissions from mobile sources in 2010. In practice, they are followed by certain interventions by environmental enforcement authorities and even in some cases by urgent investments out of the President's Reserve Fund. However, one of the shortcomings of this approach is that it precludes the design of a more effective environmental enforcement system with a set of key measures that mesh together and are most likely to improve compliance. Moreover, it hinders the formulation of a strategic view towards the planning and management of the activity of MENR inspectors, including the evaluation of the resource requirements for staffing and infrastructure and capacity-building needs. The need for Azerbaijan to develop and implement a well-articulated environmental enforcement strategy was already addressed in recommendation 1.5 of the country's first EPR. In addition, the second EPR has highlighted the importance for the Ministry of Ecology and Natural Resources of considering such aspects of planning and managing of its environmental inspection activity as operational and human resources management, the enforcement toolkit available and actually used by environmental inspectors, and performance indicators for assessment of the effectiveness of environmental enforcement.

Recommendation 2.2:

In order to follow international practices on environmental inspection, such as the EU Minimum Criteria for Environmental Inspection, the Ministry of Ecology and Natural Resources should:

- (a) *Improve the operational and human resources management in the relevant structures, including staff training, and upgrade its technical capabilities;*
- (b) *Based on the implementation of the EPR-I recommendation 1.5, streamline the instruments used to achieve compliance and enforcement. A first step would be to identify particular groups of the regulated community and their impact*

on ambient environment conditions. Further priorities should then be set among the most problematic geographic areas and the most polluting installations, and enforcement tools selected that will effect the most appropriate enforcement response; and

- (c) *Improve the existing set of indicators, which currently falls short of measuring both environmental improvements (e.g. pollution reduction amounts) and enforcement results (e.g. compliance rates and timeliness of compliance actions), so that the effectiveness of enforcement can be assessed more accurately.*

The environmental enforcement system in Azerbaijan relies almost solely on administrative fines for non-compliance with environmental requirements and standards. Once non-compliance has been established by environmental inspectors, as a rule, this is followed immediately by the imposition of a fine. At the same time, in 2007 extremely high fines for environmental offences were introduced in the country via amendments to the Code on Administrative Offences. While this was done to ensure the deterrent effect of administrative sanctions, some of them seem disproportionate and inefficient. In some instances, the fines foreseen by the Criminal Code are less than the administrative fines stipulated for similar illegal actions in accordance with the Code on Administrative Offences as amended in September 2007, e.g. on illegal fishing and illegal hunting of aquatic animals. In addition, the high number of appeals of decisions concerning the imposition of administrative fines and the imbalance as regards the amounts of fines and compensation for the period 2008–2009 provide clear signals in this regard.

Recommendation 2.3

The Cabinet of Ministers should launch a review of the system of administrative sanctions for non-compliance with the aim to make it more consistent, proportionate and efficient by covering the examination of the amounts of fines introduced in 2007 and possibilities to provide a more broad set of administrative sanctions, which are not limited only to monetary administrative penalties.

The statistical reports submitted by the Ministry of Ecology and Natural Resources to the State Statistical Committee do not cover the data on inspections and enforcement on conservation of biodiversity and specially protected natural areas. They concern all the data on violations and enforcement actions taken by the following three MENR departments: the Department of Biological Diversity Protection

and Specially Protected Nature Areas Development; the Department for Reproduction and Protection of Aquatic Bioresources; and the Forestry Department. One of the negative consequences of this situation is that these data are not available to the general public.

Recommendation 2.4:

- (a) *The Ministry of Ecology and Natural Resources should make publicly available data on established cases of non-compliance and enforcement measures (See chapter 3)*
- (b) *The State Statistical Committee in cooperation with the Ministry of Ecology and Natural Resources should reconsider the content of the statistical reporting form “1 – environmental protection” in order to cover the data on established cases of non-compliance and enforcement measures on protection of fauna, flora, forests and specially protected natural areas.*

* * * * *

Those following parts of recommendations from the first EPR of Azerbaijan that are still valid and their preceding conclusions are listed below.

While policy planning and legislation are important, overall success can only be measured through implementation. The current system of State ecological expertise is described in the 1999 Law on Environmental Protection, and it applies to a very broad range of products and services, activities and policies. In this respect, it combines both environmental impact assessment and strategic environmental assessment in a single package, with no clear differentiation between them. It is important to update the system and make it consistent with standard international practice.

EPR I - Recommendation 1.3:

The Ministry of Ecology and Natural Resources should undertake the following:

- (a) *Redesign the system of Ecological Expertise with environmental impact assessment legislation based on international experience and practices, with clear guidelines regarding screening and scoping procedures; initial steps towards decentralized decision-making in this area should be planned for the mid-term;*
- (b) *Develop separate legislation for Strategic Environmental Assessment (SEA), which applies to a higher stage of national planning and requires a higher degree of coordination.*

The Azerbaijani Government (including the Ministry of Ecology and Natural Resources) has a strong vertical administration that is well positioned for centralized implementation and enforcement. In the case of environmental legislation, compliance and enforcement responsibilities are mostly concentrated within the Ministry of Ecology and Natural Resources; its enforcement structures need to be better consolidated and empowered. This requires the development of new legal documents and procedures as well as adequate financing and human capacity. At the same time, the responsibilities of the central office and the regional divisions should be clearly delineated – particularly in the area of inspection.

EPR I - Recommendation 1.5:

The Ministry of Ecology and Natural Resources should assess the entire national framework for compliance and enforcement, with the aim of developing and

implementing a well-articulated enforcement strategy, which should, inter alia:

- (a) Identify the weaknesses in the present system of compliance and enforcement (e.g. absence of procedural documents, overlapping of responsibilities of various agencies, low level of financing and motivation, outdated standard- and payment-setting approaches, inadequate court proceedings) and prepare a list of legislative and institutional measures to address these problems. This list should form the nucleus of an action plan;*
- (b) Give special attention to the use of compliance promotion measures, (e.g., cleaner technology centres, voluntary environmental audits, environmental management systems and eco-labelling) in parallel with compliance monitoring and enforcement, and to setting firm and transparent procedures for this.*

Chapter 3

MONITORING, INFORMATION, PUBLIC PARTICIPATION AND EDUCATION

3.1 Introduction

The first environmental performance review of Azerbaijan highlighted a number of areas of environmental monitoring and information management that required particular attention and improvement. Most enterprises did not monitor their emissions into the environment. Ambient environment monitoring networks run by various public authorities were underdeveloped and weak. Analytical laboratories were poorly equipped. There was no coordination between monitoring institutions on location of monitoring posts, sampling methods and data exchange. No comprehensive environmental publication was published in Azerbaijan on a regular basis.

The first review also flagged problems and bottlenecks impeding public access to environmental information and public participation in environmental decision-making in Azerbaijan. Results of environmental monitoring and data collection were not easily accessible to the general public. Public participation in environmental decision-making was limited to participation in EIA procedures. Stringent registration procedures for NGOs precluded active involvement of civil society in environmental activities. NGOs were not provided with sufficient opportunities for contributing to national environmental policy-making.

The evaluation in the present chapter demonstrates that Azerbaijan has made some progress in the above-mentioned areas since the first Environmental Performance Review (EPR) was published in 2003. However, much still needs to be done by the Government and specific public authorities to make environmental monitoring an effective information and policy tool, to promote public participation in decision-making, and to raise the public's awareness and understanding of key issues relating to environmental protection and sustainable development.

3.2 Environmental monitoring

Ambient quality monitoring

The National Department of Environmental Monitoring (NDEM), the National Hydrometeorological Department (Hydromet), the Caspian Complex Monitoring Administration and the Geological Exploration Service that are under the Ministry of Ecology and Natural Resources operate monitoring networks on air, water and soil quality, background radioactivity and biodiversity. The location of observation stations and posts is presented in map 3.1. The developments in individual monitoring networks since the first EPR are summarized in table 3.1.

Air quality monitoring

There has been no change in the air quality monitoring network over the last 10 years. Twenty-six air quality monitoring stations continue operating in eight cities: Baku, Ganja, Sumgayit, Mingachevir, Ali Bayramly, Lenkeran, Sheky and Nakhchivan. The NDEM Central Analytical Laboratory analyzes air samples from nine monitoring stations in Baku. Seven regional analytical laboratories of Hydrometeorological Service analyze air samples taken at 17 monitoring stations in other cities.

Eighteen parameters are measured in total in the country. No change in the number of measured parameters has taken place since 2003. Air concentrations of a number of air pollutants identified by the international community as most harmful to human health and the environment – ground-level ozone (O₃), fine particulates (PM_{2.5} and PM₁₀), volatile organic compounds (except Formaldehyde), heavy metals (except mercury (Hg) and lead (Pb)) and persistent organic pollutants – are not measured in Azerbaijan.

Table 3.1: Development of environmental monitoring networks, 2004–2010

Network	2004	2005	2006	2007	2008	2009	2010
Air quality monitoring							
Cities covered by monitoring	8	8	8	8	8	8	8
Fixed monitoring stations	27	26	26	26	26	26	26
including automated stations	0	0	0	0	0	0	0
Mobile monitoring laboratories	1	1	1	1	1	1	1
Stations for:							
background monitoring	0	0	0	0	0	0	0
transboundary monitoring	0	0	0	0	0	0	0
monitoring of atmospheric precipitation	20	20	21	21	21	21	21
monitoring of snow cover	5	5	5	5	5	5	5
Monitoring of surface water quality							
Water bodies covered by hydrochemical measurements	41	41	41	42	42	42	42
Water bodies covered by hydrobiological measurements	0	0	0	0	0	0	0
Background monitoring posts	45	47	47	48	48	47	48
Groundwater monitoring points	800*	n/a	n/a	n/a	n/a	n/a	650*
Soil quality monitoring							
Cities where heavy metals in soil are monitored	5	5	5	5	5	5	5
Cities where persistent organic pollutants are monitored	23	23	23	23	23	23	23
Radiation monitoring							
Stations measuring daily gamma radiation exposure	41	41	41	41	41	42	42
Stations taking precipitation samples to calculate aggregate beta-activity	11	11	11	11	11	11	11
Forests monitoring							
Number of forest plots where regular monitoring is conducted	10	12	10	10	10	10	n/a
Share (%) of forest area where regular monitoring is conducted	0.04	0.04	0.04	0.04	0.04	0.04	n/a

Sources: Communication to the EPR team by NDEM, 2010.

Notes: * - approximation; n/a - data are not available.

Sampling and analytical methods follow requirements set out in the 1989 and 1995 guidebooks and have never been reviewed or revised. Samplings continue to be taken manually following the so-called incomplete programme: samples are taken three times a day and not four as required by current monitoring regulations. The low frequency of measurements and the absence of automated monitors do not allow registering accidental or intentional short-time emissions into the air by the polluters.

Overall monitoring results demonstrate continuing exceedences of air pollution levels against national air-quality standards (maximum allowable concentrations

(MAC)) by dust, carbon monoxide (CO) and nitrogen oxides (NO_x) in Baku and other cities (see chapter 6).

In 2010, the Cabinet of Ministers earmarked five million manat to install five automated monitoring stations in Baku. These stations, to be operational in early 2011, will monitor ozone (O₃), PM_{2.5} and PM₁₀, among other parameters. NDEM is expecting that further funds will be forthcoming to install also two automated monitoring stations in Sumgayit.

Discussions are under way with Norway to help establish a background and transboundary station on the boarder with the Russian Federation.

Surface inland water monitoring

Surface water quality is measured in 50 observation points in 42 water bodies (27 rivers, 4 water reservoirs, 1 port, and 10 lakes) in Azerbaijan. Water samples are taken downstream and upstream of wastewater discharges. Measurements cover basic ions, gases, nutrients, 8 specific pollutants (oil and oil products, phenols, DDT etc), 16 heavy metals and hydrological and physical conditions. There has been no change in measured parameters since 2003. Although hydrobiological observations in surface water are required by the national monitoring rules (Decree No. 90 of the Cabinet of Ministers dated 1 July 2004), they are not implemented in Azerbaijan. NEMD plans to start hydrobiological measurements in one lake in 2010.

Since 2005, NDEM has been taking water samples in transboundary segments of the Kura and Araz Rivers near the border with Georgia. Three times a week, water samples are checked against the level of pollution by oil, oil products, phenols, pesticides and some other pollutants. Once a month, samples are analyzed to trace the presence of heavy metals in water. Water analyses are conducted by two modern analytical laboratories established in the Gazakh (Kura River) and Beilagan (Araz River) districts.

Azerbaijan cooperates with Georgia on monitoring and assessment of water quality in the Kura River (see Chapters 4 and 7).

The Ministry of Health, through its Centre for Epidemiology and Hygiene, is monitoring surface waters used for abstraction of drinking water supply and for recreational purposes.

In 2004–2005, under a NATO/OSCE Kura-Araz watershed project, surveys were conducted in the Kura River Delta. Water samples were taken on a monthly basis at 35 points to monitor heavy metals and general characteristics. During an extension of the project, radionuclides and POPs were also monitored. In 2005, IAEA conducted a radiological survey of the Kura and Araz rivers in Azerbaijan.

Monitoring in the Caspian Sea

The Caspian Complex Monitoring Administration monitors the 955 km long shore of Azerbaijan at 341 monitoring points, both run-offs entering the Caspian Sea (310 industries, wastewater treatment plants, rivers) and 31 industrial installations (e.g. platforms) operating at sea. During bathing season,

it monitors bathing waters at the beaches jointly with relevant institutions of the ministries of Health and of Emergency Situations. During compliance inspections, NDEM monitors the same on-shore pollution sources as the Caspian Complex Monitoring Administration. There is no coordination of these monitoring activities between the two entities of the same Ministry. Sample analysis results are compared on an ad hoc basis.

Four marine expeditions took place during 2008–2009, covering all national sectors of the countries participating in the Caspian Environment Programme except the Islamic Republic of Iran. The cruises were carried out with input from national experts. Their purpose was to assist the countries in developing a regional water quality monitoring plan and to assess the pollution of the Caspian Sea, focusing on polluted areas of concern. High concentrations of oil products, phenols and arsenic were found in Baku Bay and in the coastal area of Sumgayit. In the area of the Shrivand sewage canal, Kura River and Baku Bay, high rates of chromium, copper and other metals concentration were observed in the bottom sediments. In Baku Bay, the high level of contamination of the sediments with benzo(a)pyrene was identified. High concentrations of chlorinated organic pesticides and dichlorodiphenyltrichloroethane (DDT) were observed in bottom sediments of Kura-Araz alluvium, despite the global DDT ban.

Azerbaijan actively participated in the Transboundary Diagnostic Analysis (TDA) of the Caspian Sea developed in 2007 (the first one was conducted in 2002). TDA was a scientific and technical assessment, through which the water-related environmental problems of the Caspian Sea region were identified and quantified, their causes analyzed and their impacts, both environmental and economic, assessed. The TDA provided a technical basis for the development of national Caspian action plans and a strategic action programme. The TDA 2007 called for the activation of an integrated monitoring programme for fisheries, pollution and oceanography, to better assess the status of marine biodiversity in the Caspian Sea. Azerbaijan is taking some steps in this direction.

Groundwater monitoring

Over the period from 2004 to 2010, the Geological Exploration Service decreased the number of boreholes in its stationary monitoring network from some 800 to around 650. Groundwater levels, temperature and flow discharge are generally measured three times a month, while chemical water quality in the monitored aquifers is measured once a year. The number and

types of parameters measured have not changed since the first EPR.

Soil quality monitoring

NDEM continues regular measuring of soil quality parameters in different districts and industrial sites. In Baku, Ganja, Mingchevir, Shirvan and Sumgayit, soil pollution by 10 heavy metals is monitored. On Absheron Peninsula and the cities of Salyan Shirvan, and Syasan, soil pollution by oil and oil products is monitored. Twice a year, pollution of agricultural lands by chlorine organic and phosphor organic substances, pesticides and herbicides is measured in three districts. Measurements are rotating between districts so as to cover each of 21 districts subject to soil monitoring every seven years. NDEM receives monthly statistical data on the pollution of soils by toxic and household waste in all cities and districts of Azerbaijan. In addition, it collects data on soil pollution by atmospheric precipitation at 21 observation points.

Radioactivity

In 2009, NDEM increased by one the total number of stations (42) measuring the level of background radiation in Azerbaijan. In addition, in 2009, under a technical cooperation agreement with the International Atomic Energy Agency (IAEA), Azerbaijan established an automated system to monitor background radioactivity in border areas. Every 30 minutes, 6 observation points report data to the NDEM and the Emergencies Management Centre of the Ministry of Emergency Situations. The network of 11 stations measuring the radioactivity of atmospheric aerosols remains unchanged. The overall radioactivity monitoring network is presented in map 3.2.

Analytical laboratories

The NDEM central analytical laboratory (Centre for Environmental Pollution Monitoring) consists of seven analytical laboratories in Baku and two in districts (Gazakx and Beilagan). Out of the seven Baku laboratories, five (air, precipitation, water, soils and measurement tools) have been accredited. Accreditation of the other two (radioactivity and microbiology) is pending. Laboratory equipment is generally renewed with the support from international projects. A one-time contribution amounting to 260,000 manat was provided from the State budget for strengthening NDEM laboratories in 2005. In 2010, NDEM is expected to receive funds from the State budget to acquire a mobile analytical laboratory.

Since the first EPR, within the framework of the Caspian Environment Program (CEP) and through international donor support, the analytical laboratory of the Caspian Complex Monitoring Administration has received a substantial amount of analytical equipment and sampling facilities. This laboratory is accredited and the instruments are certified.

The Ministry of Health operates a network of 64 analytical laboratories at district centres for hygiene and epidemiology. Only a few of these laboratories are accredited.

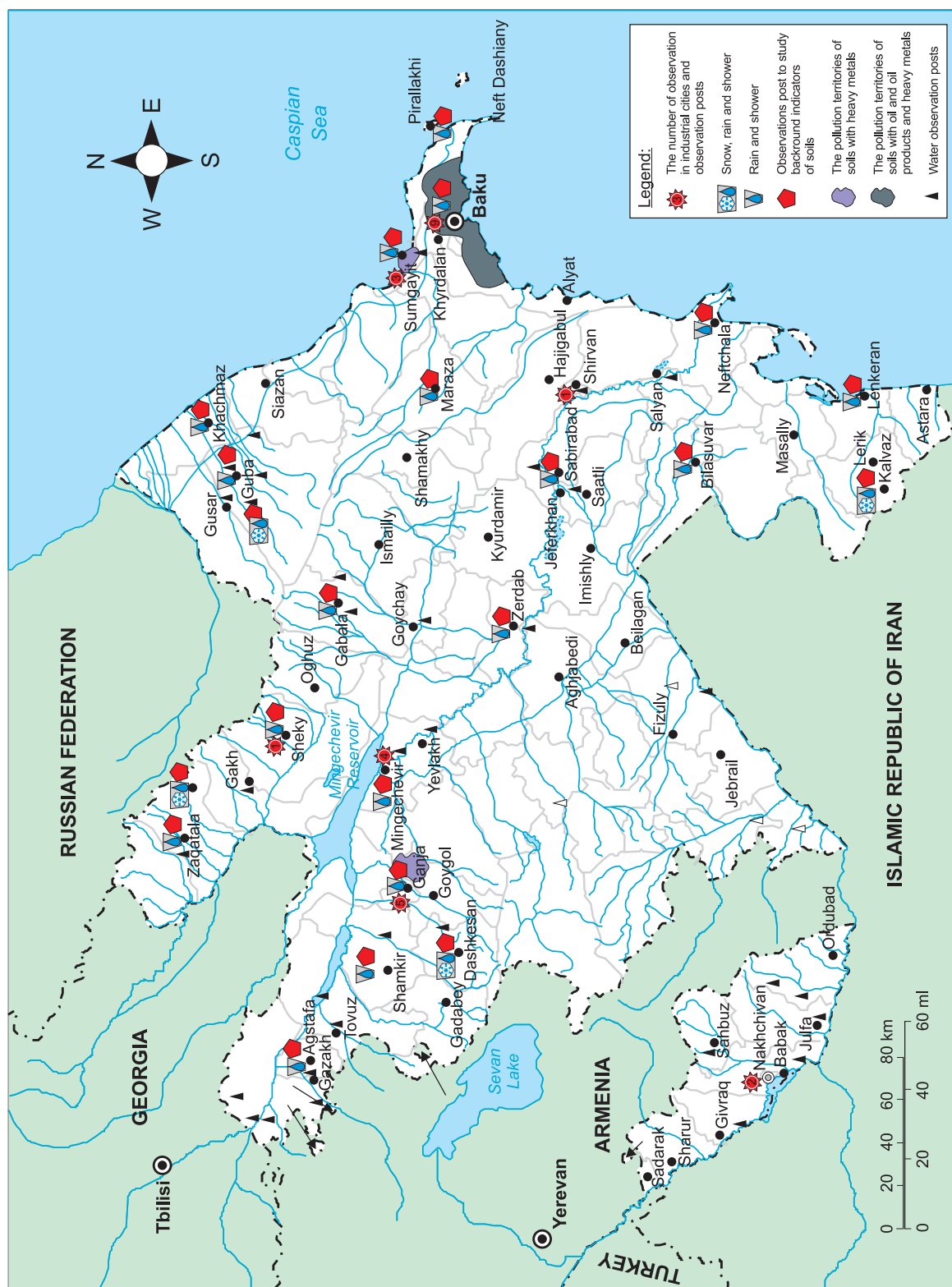
Monitoring of biodiversity, including forests

The last comprehensive forestry inventory was prepared in Azerbaijan in 1993. Since 2002, inventories have been launched in forestry management units, one by one. The resulting data are not published but stored in the State information and archive database on environmental protection and the use of natural resources. It is planned to complete this inventory in all 40 units by end 2010. The second cycle of forest inventory is expected to start in 2012. In 2011, MENR intends to organize a forest inventory expedition in national parks.

In 2004, the Scientific and Research Fishery Institute under the MENR Department of Fisheries resumed annual marine expeditions in the Azerbaijan segment of the Caspian Sea. It studies the stocks of four sturgeon species, herrings and seals as well as forage reserves and hydrochemistry of the sea water. The Academic Institute of Zoology conducts regular fish and forage reserve surveys in two water reservoirs in Azerbaijan. Based on the results of the expeditions of these two institutions, the Department of Fisheries sets annual fishing quotas. Fish population data are not published but are available upon request. The data demonstrate the trend of decreasing fish populations in both the Azerbaijan segment of the Caspian Sea and freshwater reservoirs.

Within MENR, studies on biological diversity are also carried out by NDEM, the Department of Biological Diversity Protection, the Specially Protected Nature Areas Development and the Caspian Integrated Ecological Monitoring Department. Administrations of protected areas monitor biodiversity situation in these areas and report monitoring data twice a year to MENR. These data collection and monitoring activities allow MENR, in particular, to regular update population data on 126 bird and 30 mammal species. It is cooperating with the World Wildlife Fund (WWF) Caucasus office in establishing a database to

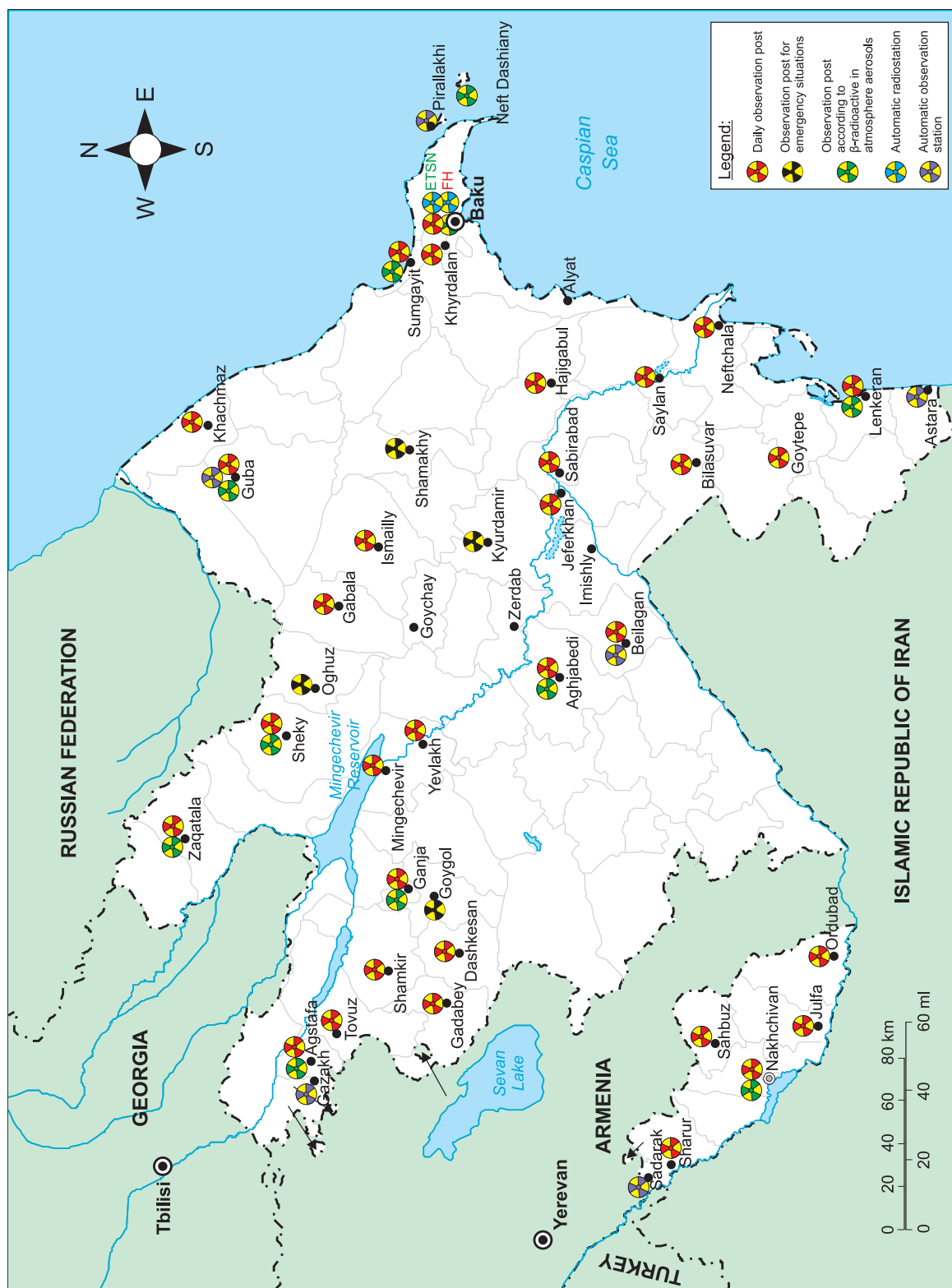
Map 3.1: Main networks of environmental monitoring



Source: Ministry of Ecology and Natural Resources, 2010.

Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

Map 3.2: Monitoring network of radiation background and β -radioactivity in aerosols and monitoring network of automatic radiation background stations



Source: Ministry of Ecology and Natural Resources, 2010

Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

assess and monitor biodiversity using indicators (see Chapter 9)

In the National Academy of Sciences, various institutes conduct studies on the country's species and ecosystems. The Institute of Microbiology focuses on the distribution and applied use of microorganisms. The Institute of Botany studies the distribution and ecology of lower and higher plants, including description of new species of algae from the Caspian Sea. The Institute of Zoology concentrates on animal species and species composition.

The private sector also assists with monitoring of and research on biodiversity in Azerbaijan. For example, British Petroleum (BP) monitors biodiversity both on- and off-shore (including populations of fish, birds and mammals).

3.3 Information management and reporting

Environmental publications and databases

NDEM publishes four regular bulletins with monitoring results (table 3.2). These bulletins are circulated within MENR and are submitted to the President's administration, the Cabinet of Ministers, Parliament (Milli Mejlis), selected ministries, other public entities and municipal authorities. Monitoring data are uploaded at the MENR website (www.eco.gov.az).

NDEM submits annual reports to MENR on the results of its monitoring activities for air, surface waters, soils, radioactivity and biodiversity. These reports are not uploaded on Internet and are not available to the public. MENR prepares monthly uploads on its website covering brief reviews of monitoring activities conducted by NDEM and other subordinated institutions.

NDEM receives on a regular basis monitoring data from other monitoring institutions in the country. Data are submitted according to a dedicated form approved by MENR. In addition, it receives for checking

statistical data reported by enterprises on their emissions into the atmosphere, discharges into water bodies and the generation of hazardous waste. There is no evidence, however, that NDEM is linking various data flows to help study cause-and-effect relationships and to develop an environmental database that is user-friendly and accessible to all interested public authorities and the general public.

The Caspian Complex Monitoring Administration circulates a weekly bulletin with monitoring results among 14 public authorities. Its monthly monitoring bulletin and a summary of its annual report are uploaded on the MENR website.

The Geological Exploration Service publishes a monthly bulletin on groundwater and submits an annual report on the results of its groundwater monitoring activities. It maintains a groundwater cadastre with 18 types of georeferenced information on over 2,500 boreholes in the country. At the same time, there is no database on groundwater quality in Azerbaijan. There is no evidence that groundwater monitoring data are used in decision-making and that they are accessible to the public.

MENR continues to update its State information and archive database on environmental protection and the use of natural resources. The hydrometeorological and geological databases, together with the environmental monitoring bulletins and monthly and annual reports of the main departments and regional environmental committees of the Ministry provide the basis for the database. Many data sets and much information stored in the State information and archive database are not in electronic form and are not easily accessible to users, including the general public.

The Centre for Epidemiology and Hygiene of the Ministry of Health manages a database with the results of monitoring air quality in residential areas and indoors, quality of bathing water and water used for drinking water supply, soil quality in residential areas, noise, vibration and other physical impacts, radiation exposure and food quality. This database is not accessible to external users and the Center does

Table 3.2: Environmental monitoring bulletins published by NDEM

Subject	Periodicity	Number of copies
Air pollution and background radiation	Daily	28
Pollution of surface water bodies	Monthly	20
Hydrochemical pollution of transboundary Kura and Araks rivers	Once in 10 days	30
Level of environmental pollution	Weekly	25

Source : NDEM, 2010.



Information stand, Hirkan National Park

not publish monitoring data. The Centre has recently started developing a database that is expected to help in assessing the impact of environmental pollution on human health. Data from NDEM on air, water and soil quality is being linked with morbidity data.

The Ministry of Health does not publish reports on health and the environment in Azerbaijan. However, it regularly uploads on its website (www.mednet.az) information on the quality of drinking and bathing water and on food poisoning cases in the country.

Azerbaijan does not publish state-of-the-environment reports. This is contrary to the country's obligations under the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Article 5.4), to which Azerbaijan acceded on 23 March 2000. MENR has not established a legal and institutional framework for producing regular environmental assessment reports, as recommended by the Guidelines on the Preparation of Governmental Reports on the State and Protection of the Environment and the Guidelines for the Preparation of Indicator-based Environment Assessment Reports in Eastern Europe, Caucasus and

Central Asia, which were endorsed at the 2003 Kiev and 2007 Belgrade Ministerial Conferences "Environment for Europe", respectively.

In compliance with its legally binding obligations, Azerbaijan has prepared several communications to governing bodies on multilateral environmental agreements (MEAs). In 2010, Azerbaijan prepared a second communication to the United Nations Framework Convention on Climate Change (UNFCCC). In 2006, it submitted its third report to the United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD). In 2010, the country reported on the status of its implementation of the Protocol on Water and Health. That same year, it submitted to the Stockholm Convention on Persistent Organic Pollutants (POPs) a National Implementation Plan covering a basic inventory of POPs in Azerbaijan. In 2004 and 2010, Azerbaijan submitted national reports to the Convention of Biological Diversity (CBD), which included an inventory of ecosystems and species. However, it failed to submit two mandatory national reports in 2006 and 2008. Azerbaijan did not

submit a country report to the Food and Agricultural Organization (FAO) for the 2010 Forest Resources Assessment (Chapter 4).

MENR does not upload the reports to MEAs on its website, and the reports are not available to the general public.

Environmental statistics

The State Statistical Committee continues to publish an annual statistical yearbook on the environment (“Environment in Azerbaijan”). This trilingual (Azeri, English and Russian) publication with a print run of 150 copies contains statistical data on the population, land resources, forests, the protection and use of water resources, the protection of the atmosphere, waste, geological exploration and energy, environmental expenditures and international comparisons. The Committee also publishes regular bulletins on hazardous waste and air emissions in Azerbaijan. Environmental statistics are regularly uploaded on the website of the Committee (www.azstat.org). Core environmental data are also published annually in the Statistical Yearbook. In 2006, the Committee published the findings from the statistical survey relating to the impact of environmental pollution on human health.

The State Statistical Committee is extending the application, on a step-by-step basis, of the UNECE Guidelines for the Application of Environmental Indicators in Eastern Europe, Caucasus and Central Asia. Six indicators from the Guidelines were introduced into mandatory statistical reporting in the country in 2009. That same year saw the introduction of data collection on medicinal waste and data reporting on hazardous waste according to the classification of the Basel Convention on Transboundary Movements of Hazardous Waste. By 2011, the Committee plans to finalize a classification of environmental expenditures by individual sources of expenditure. Much remains to be done. For instance, there is insufficient data on industrial waste in Azerbaijan and the quality of the published data is questionable (Chapter 8).

3.4 Access to information and public participation

Communication with the public

MENR is making efforts to ensure that environmental information is accessible to the public. It has compiled a mailing list of institutions targeted to receive environment-related information, which it has uploaded at its website. In addition to an Aarhus Information Centre opened within the Ministry in 2003, two similar centres were established in Ganja and Gazakh in 2007. All three centers host meetings covering various environmental topics. Schoolchildren, students, NGO representatives and community members benefit from access to Internet and environmental publications provided by the centres. MENR intends to open further centres in other parts of Azerbaijan, including Lankaran, Shaki, Ali Bayramli, Mingachevir, Guba and Nakhchivan. MENR regularly updates its website (www.eco.gov.az). Its information is primarily in the national language, but the English version of the site is slowly expanding.

Modern telecommunication technologies are increasingly used by relevant public authorities in Azerbaijan to communicate environmental information to the general public. Trends in the development of these technologies are presented in table 3.3.

MENR works with the media and NGOs to produce information leaflets for the general public, especially leaflets devoted to national parks and State nature reserves. It issues press releases and circulates them among journalists and NGOs. It also posts the press releases at the Ministry’s website. MENR issued some 20 posters designed to raise environmental awareness and distributed them to educational institutions, NGOs, companies and organizations.

An annual contest entitled “The Best TV Broadcasts and Articles on Environmental Subjects” is organized in Azerbaijan. Arts contests entitled “The Environment through the Eyes of a Child” and “Weather through the

Table 3.3: Telecommunications development, 2004–2009

	2004	2005	2006	2007	2008	2009
	per 100 inhabitants					
Telephone lines	12.0	13.0	14.0	15.0	15.0	16.0
Internet users	5.0	8.0	10.0	11.0	17.0	27.0
Personal computers	1.8	2.3	3.1	3.7	4.4	5.7

Source: State Statistical Committee, 2010.

Eyes of a Child” are held for schoolchildren. MENR organizes environmental workshops at secondary schools and roundtables for teachers and students of higher educational institutions, as well as for municipalities and NGOs. Many of these initiatives are financed from the State Fund for the Protection of the Environment.

In 2009, MENR published a book on environmental policy of Azerbaijan from 2003 to 2008. On the other side, some years ago it ceased to publish the *Priroda Azerbaijan* (Nature of Azerbaijan), its monthly magazine aimed at a wide audience. MENR plans to resume this publication in 2011.

MENR operates a hotline to consider information requests and complaints about violations of the environmental legislation from representatives of the general public. All citizens' complaints are recorded in a special log, e.g. 280 phone calls were registered for the first five months of 2010.

It appears that sectoral ministries like the Ministries of Economic Development, Industry and Energy, Agriculture and Transport do not actively communicate to the general public the environment-related data and information that they collect or produce.

Environmental NGOs

According to the Fourth National Report to Convention of Biological Diversity (2010), there are about 80 NGOs working in environmental education, environmental law, ecotourism, wildlife protection, environmental technology, waste management or other environmental areas. Some 35 of these (nearly all located in Baku) are currently active.

MENR maintains a dialogue with the environmental NGO community. The Minister continues to invite representatives of selected NGOs and mass media to round-table discussions on key national environmental problems. Four such meetings were held in 2009 at the NGOs' initiative and two meetings in early 2010. MENR organized round tables with NGOs on “Environmental Challenges of the Caspian Sea”, “Sustainable Use of Water Resources and Protection of Water Bodies from Pollution”, “Protection of the Ozone Layer”, “The Caspian Sea is the Largest Lake of the World” and other topics. NGO representatives participate in the work of expert commissions established at the Ministry. MENR, meanwhile, did not realize its intention expressed during the first EPR to establish an NGO Consultative Council at the Ministry.

Other ministries such as the ministries of Health, Economic Development, Industry and Energy, Agriculture and Transport do not cooperate with NGOs on environment-related issues under their respective responsibilities.

Public participation

Parliamentary commissions invite members of the public to participate in working groups preparing draft laws. Public was widely consulted in preparing some governmental programmes such as the State Programme for Poverty Eradication. MENR invited the public to participate in the ongoing preparation of a new edition of the Red Data Book.

The legislative framework for State ecological expertise (SEE) has not been changed in Azerbaijan since the first EPR. The MENR State Expertise Administration and State Ecological Expertise Departments in the MENR regional offices continue to include representatives of research and academic institutions and of NGOs on SEE expert commissions. Public hearings are conducted on large projects subject to the Environmental Impact Assessment (EIA) procedure. Examples in recent years include projects on a waste incineration plant in Balakhan, the development of the Tchirak offshore oil deposit, the construction of Sumgayit Combined Cycle Power Plant, the construction of Valvalichay-Taxtakorpu canal, the restoration and modernization of Bahrantepe Main Hydroengineering complex, the reconstruction of the Baku-Russian Federation State border highway, the construction of the Garadag-Sangachal oil terminal station and the exploitation of gold fields in the Gadabay region.

The MENR State Expertise Administration requires the submission by large project developers of public hearings reports. However, it has not developed procedures for holding public hearings. As a result, the public is not frequently informed about contact points to whom written comments should be sent or about deadlines for comments. Nor are members of the public informed whether their comments were taken into account in the decisions as a result of EIA and, if not, on what grounds. A parallel public ecological expertise that is foreseen by the national legislation is practically non-existent in Azerbaijan. SEE decisions are not uploaded on the MENR website, although they may be accessed upon request.

Environmental permit issuing and licensing procedures are not open to the public in Azerbaijan. Information on permits and licenses granted and

on enterprise environmental passports (profiles) approved is not easily accessible to the public. Azerbaijan has made little progress since the first EPR in making information on environmental performance by industries known to a broader public. It does not regularly disseminate information on established cases of non-compliance and sanctions imposed for non-compliance (see Chapter 2). Some information is uploaded on the MENR website, but only on an ad hoc basis. Members of the public who submit complaints concerning non-compliance cases are informed of the results of the inspections conducted further to such complaints.

3.5 Environmental education

Until recently, environmental educational and training in the country was rather unsystematic in Azerbaijan. Over the past few years, however, the situation has improved. Environmental issues have been included in pre-school and school curricula, and some schools offer advanced courses in Ecology.

Preschool and school education

In Azerbaijan, elements of environmental education are provided at the pre-school educational institutions. The following methodical manuals are used for the purpose, i.e., “Environmental education at nursery schools”, “Khazar” child environmental programme“, “Khazar” child environmental programme, environmental games“, “My first book on nature” (for 3-4 year old children) and “My first book on nature” (for 5-6 year old children).

Environmental issues in schools are presented in courses on Natural History, Biology and Geography. The Ministry of Education has launched the preparation of textbooks on “Ecology and use of

natural resources”, “The fundamentals of ecology”, “Social ecology”, “Environmental law”, “Ecology and environmental protection” and “Environment, economy and life”.

NGOs and some international organizations have launched initiatives on environmental education in schools in Azerbaijan. An example of such initiatives is presented in box 3.1.

The State Ecological Training and Education Centre of the Ministry of Education operates a series of environmental education centres for children and youth in some districts. The Centre invites experts from the Azerbaijan National Academy of Sciences, governmental and non-governmental organizations to conduct environmental awareness-raising courses.

Vocational training and higher education

Within vocational training, the following professions are trained: guarding hunter in protected areas, guide in national parks and forest warden in forestry.

In higher educational institutions, a number of environmental subjects have been included in curricula, such as theoretical ecology, environmental standardization and certification, applied ecology, technical and technological bases of environmental protection, general ecology, environmental situation and problems in Azerbaijan, radioactive pollution, processing of industrial and household waste, environmental expertise, environmental monitoring, industrial ecology and urban ecology.

The curricula in Azerbaijan include subjects on Geo-ecology, Plant Ecology, Animal Ecology, Land Ecology, Human Ecology, Ecological Toxicology and Ecological Epidemiology.

Box 3.1 Green Pack Initiative

The Organization for Security and Co-operation in Europe (OSCE) Office in Baku supported the introduction of a Green Pack environmental education tool kit in Azerbaijan Schools from 2005 to 2008. Within the framework of this initiative, the Azerbaijani version of the Green Pack educational tool was produced, and trainers were taught how to use the tool kit. The overarching goal of the project was to raise environmental awareness of children and young people in Azerbaijan. To achieve this, the initiative emphasized reaching out to new teachers and graduate students who received teaching assignments in rural schools of the country. An NGO, Society for Sustainable Development, was the implementing agency, which together with the Ministry of Education and MENR conducted training seminars for 1,114 secondary school teachers and distributed sets of Green Packs in 890 schools. In addition, 50 graduates of the Azerbaijan Pedagogical University and 7 postgraduate students from Nakhchivan State University (NSU) received Green Pack training. Green pack training was also provided to 22 professors at NSU.

Source: OSCE

Table 3.4: Training environmental specialists at universities; 2003–2009

per 100 inhabitants

	2003	2004	2005	2006	2007	2008	2009
Total	217	221	172	177	257	258	298
Bachelors degree	197	209	147	138	245	235	279
Master degree	20	12	25	39	12	23	19

Source: State Statistical Committee, 2010.

An ecology subject was included in the List of Subjects for the Bachelor's Degree of Higher Education, approved by Resolution No. 8 of the Cabinet of Ministers dated 12 January 2009. As a follow-up, the Ministry of Education developed and approved an educational standard for this subject. In the 2009/2010 academic year, Azerbaijan State Pedagogical University, Ganja State University, Baku State University, Azerbaijan State Economics University and Lankaran State University launched Bachelor-level education on Ecology.

In addition, training in Environmental Engineering was introduced at Azerbaijan State Oil Academy, Azerbaijan Technical University, Azerbaijan Architectural and Building University, Sumgayit State University, Azerbaijan Technological University and Mingachevir Polytechnical Institute.

The total number of university graduates in environment (Ecology and Use of Nature) over the period 2003–2008 is presented in table 3.4.

Retraining

The Academy of State Management under the President's Office organizes annual short-term environmental training courses for senior management staff of governmental institutions. The MENR Institute of Training and Retraining runs two-four week training courses and one-two day retraining seminars for staff of the Ministry and its subordinating units. From 106 to 175 people were trained annually during the period from 2005 to 2009. Topics included environmental monitoring, protected areas management, sustainable forest management, environmental impact assessment and protection of fish stocks.

3.6 Legal and policymaking framework

Monitoring and information

In its Resolution No. 90 of 1 July 2004, the Cabinet of Ministers approved the statute on Rules of Conducting Monitoring of the Environment and Natural Resources. It established the goals and basic requirements, e.g. frequency and number of observation points, for

12 types of monitoring, namely, for monitoring of: atmospheric air, atmospheric precipitation, water objects, land, mineral and raw material reserves, radioactivity, harmful physical impacts on the environment, waste, biological resources, protected areas, as well as sanitary and epidemiological monitoring, and monitoring of natural disasters.

As a follow-up to the statute, a Centre on Environmental Monitoring Data was established in NDEM. The Centre developed monitoring reporting forms that public institutions conducting environmental monitoring complete regularly and return to it. Although the resolution obliges the users of natural resources to report the results of their self-monitoring to MENR, no reporting forms for enterprises have been developed, as a result of which no enterprises report on a self-monitoring basis to environmental authorities in Azerbaijan. Consequently, enterprise environmental monitoring remains practically non-existent in the country.

In 2007, the Ministry of Ecology and Natural Resources, via its Decree No. 610/u of 8 November 2007, approved a form for submission by MENR regional departments of information on environmental conditions. Accordingly, each department submits to NDEM quarterly reports covering sources of air and water pollution and of waste generation in the region, quantitative and qualitative parameters of emissions, and state of land and biological resources.

NDEM has prepared but not yet published methodological guidelines on air, water and soil monitoring. There are no institutional structures or formal arrangements in Azerbaijan to coordinate monitoring and environmental data collection activities conducted by various institutions. Intercalibration exercises between analytical laboratories of NEMD, Hydromet, the Caspian Complex Monitoring Administration, the Geological Exploration Service and the Ministry of Health are sporadic or non-existent.

The Plan for Implementation of Integrated Measures to Improve Environmental Conditions in the Azerbaijan Republic for 2006–2010, approved by Presidential

Decree No. 1697 of 28 September 2006, foresaw the improvement of air quality monitoring in Baku. As a follow-up, equipment procurement is under way for five automated monitoring stations to be installed in the capital city. In accordance with other measures from the Plan, NDEM monitors wastewater discharges and water quality in 10 lakes on Absheron Peninsula.

Presidential Decree No. 2244 of 2007 on the Protection of Caspian Waters from Land-based Pollution Sources strengthened monitoring of run-offs entering the Caspian Sea from the territory of Azerbaijan.

Access to information and public participation

Two new laws that entered into force in 2005 supplemented the national legislation on public access to environmental information and on public participation in environmental decision-making. By 2005, legislation included the Constitution and the laws on environmental protection, on sanitary and epidemiological services, on access to environmental information, on information, its dissemination and protection, on freedom of information, on procedures for the consideration of citizen's appeals, on the mass media and on State secrets. The Law on Access to Information No. 1024-IIQ, which was signed by the President of the Republic of Azerbaijan on 30 September 2005, provides the public with broad opportunities to access information. The Law on Public Administration, signed by the President on 21 October 2005, facilitates public access to information and public participation in decision-making.

The implementation report submitted by Azerbaijan in 2008 at the Third Meeting of Parties to the Aarhus Convention describes the details of this legislation.

The Concept of State Support to NGOs was approved by the President on 27 July in 2007, to form a stable and effective system of cooperative relations between public authorities and NGOs, to involve NGOs in resolving problems that were considered important for the development of the State and society, and to accelerate the development of civil society. The concept identified environmental protection among priority fields for granting financial support to NGOs by the State. A State Commission on Support to NGOs, established under the President's Office, provides NGOs with grants through tenders. The National Forum of NGOs, which brings together some 700 country NGOs, cooperates with this Commission. On 30 June 2009, the Milli Mejlis adopted amendments to the Laws on Non-Governmental Organizations and on Grants, which introduced some restrictions for

NGOs activities. It obliges NGOs, in fact, to register grant agreements with an appropriate State body. In the case of grant, the corresponding bank transfer may only take place once such registration has been completed. The Code of Administrative Infringements was amended accordingly to introduce a penalty amounting to 1,000-2,500 manat (some US\$ 1,200-3,000) for failure to timely register a grant agreement.

Education

As a follow-up to the Presidential Decree on Public Environmental Education of early 2003, the Ministry of Education has developed and implemented a five-year plan to support teaching environmental subjects in State educational institutions. A number of dedicated textbooks, education materials and visual aids have been published in accordance with this plan.

The Additional Action Plan on Improvement of the Ecological Situation in the Republic of Azerbaijan for 2010–2014 foresees that the Ministry of Education, in cooperation with MENR, should develop in 2011–2012 a State programme on environmental education and awareness-raising. Much remains to be done, without delay, in preparing such a programme. Given the lack of a conceptual approach to environmental education and the broader issues of Education for Sustainable Development (ESD) in schools, it is doubtful whether the majority of school graduates will gain a holistic understanding of environmental concerns. According to the 2010 Azerbaijan report to the CBD, environmental education and training has not yet been established in the country at the necessary level. The existing curriculum and teaching aids do not comply with up-to-date requirements.

Azerbaijan has not adopted a national strategy on education for sustainable development, as recommended by the UNECE Strategy on Education for Sustainable Development. No inter-agency commission or expert group involving all stakeholders has been established in Azerbaijan to develop and promote the subsequent implementation of a national strategy.

3.7 Conclusions and recommendations

Azerbaijan has generally preserved its monitoring networks and made some progress in developing them further. It is currently installing five new (and automated) air-monitoring stations in Baku that will make it possible to measure, in particular, ground-level ozone and fine particulates. It has started analyzing water samples in transboundary segments of the Kura

and Araz Rivers by two modern analytical laboratories. Azerbaijan has established an automated system to monitor background radioactivity in border areas. The Caspian Complex Monitoring Administration has received a substantial amount of analytical equipment and sampling facilities. Azerbaijan has renewed conducting annual marine expeditions to study the population health of commercial fish species and seals in its segment of the Caspian Sea. Preparation of forest inventories is under way.

At the same time, no change in the number of measured air and water parameters has taken place since 2003. Hydrobiological observations in surface water and ground water are not implemented in Azerbaijan. Sampling and analytical methods follow requirements set out in the 1989 and 1995 guidebooks. There are no institutional structures or formal arrangements in Azerbaijan to coordinate monitoring and environmental data collection activities conducted by various institutions. Intercalibration exercises between analytical laboratories of various monitoring institutions are sporadic or non-existent. Furthermore, enterprise environmental monitoring remains practically non-existent in the country.

Recommendation 3.1:

In order to strengthen the implementation of environment-related political decisions, the Ministry of Ecology and Natural Resources should:

- (a) Continue expanding and modernizing environmental monitoring networks;*
- (b) Establish a working group composed of representatives of its own monitoring institutions, of the Centre for Epidemiology and Hygiene of the Ministry of Health and of the National Academy of Sciences to help coordinating environmental monitoring activities, facilitate the development of up-to-date guidance material, facilitate staff training and to promote the organization of intercalibration exercises and comparison of sampling analysis results;*
- (c) Develop, furthermore, detailed rules for environmental monitoring by enterprises using the Guidelines for Strengthening Environmental Monitoring and Reporting by Enterprises in Eastern Europe, Caucasus and Central Asia endorsed at the 2007 "Environment for Europe" Ministerial Conference.*

Public institutions conducting environmental monitoring and data collection in Azerbaijan maintain their own databases that are not interconnected with other. The National Environmental Monitoring Department (NEMD) at MENR regularly receives

data resulting from monitoring activities of other MENR monitoring institutions on the basis of a dedicated form. In addition, NDEM receives for checking environmental statistical data reported by enterprises. MENR continues to update its State information and archive database on environmental protection and the use of natural resources, although many data sets and information stored therein are not in electronic form and are not easily accessible to users, including the general public. No operational database has been established so far that would link various data flows to help study cause-effect relationships and develop environmental assessments that would be user-friendly and accessible to all interested public authorities and the general public. Azerbaijan could benefit of the EU-funded project on Shared Environmental Information Systems (SEIS) launched in 2010, which is implemented by the European Environment Agency in cooperation with UNECE in the framework of the EU's Eastern Partnership and which aims to improve the availability of comparable environmental information across the six countries in the region that are part of the Eastern Partnership including Azerbaijan

Recommendation 3.2:

The Ministry of Ecology and Natural Resources should:

- (a) Develop and regularly update a modern electronic database containing data from environmental monitoring activities, species inventories, enterprise environmental reporting and environmental statistical data.*
- (b) Make the database accessible and user friendly to all interested public authorities and the general public.*
- (c) Use, inter alia, the database to help study cause-effect relationships, develop environmental assessments, informing the public and report environmental data to the international community.*

Azerbaijan is making efforts to ensure that environmental information is accessible to the public. MENR regularly updates its website, and produces information leaflets and posters for the general public and press releases. In addition to an Aarhus Information Centre in Baku, two similar centres were established in Ganja and Gazakh. MENR maintains a dialogue with the environmental NGO community. NGO representatives participate in the work of expert commissions established at MENR. The Ministry of Health regularly uploads information on health and the environment on its website. At the same time, the Ministries of Economic Development, Industry and

Energy, Agriculture and Transport do not actively communicate to the general public the environment-related data and information that they collect or produce. National communications to governing bodies of multilateral environmental agreements (MEAs) are not uploaded on websites in the country and are thus not available to the general public.

Recommendation 3.3:

- a) *The Ministries of Economic Development, Industry and Energy, Agriculture and Transport should regularly upload on their websites the environment-related data and information that they collect or produce.*
- b) *The Ministry of Ecology and Natural Resources should introduce a procedure for regularly uploading copies in the national language of national reports to MEAs on its website.*

Azerbaijan produces a substantive amount of environmental data and information. However, it does not publish state-of-the-environment reports. This is contrary to the country's obligations under the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, to which Azerbaijan is a party. MENR has not established a legal and institutional framework for producing regular environmental assessment reports, as recommended by the Guidelines on the Preparation of Governmental Reports on the State and Protection of the Environment and the Guidelines for the Preparation of Indicator-based Environment Assessment Reports in Eastern Europe, Caucasus and Central Asia, which were endorsed at the 2003 Kiev and 2007 Belgrade Ministerial Conferences "Environment for Europe", respectively.

Recommendation 3.4:

The Ministry of Ecology and Natural Resources should draft a resolution for submission to the Cabinet of Ministers for adoption on the establishment of a system for periodically producing national indicator-based environmental assessment reports taking into account the internationally agreed guidelines developed for countries of Eastern Europe, Caucasus and Central Asia and the guidelines developed by the European Environment Agency. Such a system should provide, in particular, for the creation of:

- a) *An inter-agency expert group composed of officials from the Ministry of Ecology and Natural Resources and its monitoring institutions, the State Statistical Committee, the Ministries of Health, Economic Development, Industry and Energy, Agriculture and Transport, the National*

Academy of Sciences and environmental NGOs,
 (b) *A dedicated supporting working unit within or under the Ministry of Ecology and Natural Resources.*

Azerbaijan has made some progress in involving the public in environmental decision-making. Commissions of the "Milli Mejlis" (Parliament) invite members of the public to participate in working groups preparing draft laws. The public was widely consulted in preparing some governmental programmes such as the State Programme for Poverty Eradication. Representatives of research institutions and NGOs participate in SEE expert commissions. Public hearings are conducted on large projects subject to the EIA procedure. However, no procedures have been developed for holding public hearings. As a result, the public is not frequently informed about contact points to whom written comments should be sent or about deadlines for comments. Nor are members of the public informed whether their comments were taken into account in the decisions as a result of EIA and, if not, on what grounds. SEE decisions are not uploaded on the MENR website, although these may be accessed upon request. Nor is the information on environmental permits and licenses easily accessible to the public.

Recommendation 3.5:

The Ministry of Ecology and Natural Resources should develop, in consultation with NGOs, regulations supplementing existing laws to ensure that unambiguous and detailed procedures are in place guaranteeing public participation in environmental decision-making and public access to environmental information to comply fully with the Aarhus Convention.

See also recommendation 2.1 in this review.

In recent years, environmental issues have been introduced into preschool and school curricula. NGOs and some international organizations have launched initiatives on environmental education in schools in Azerbaijan. In higher educational institutions, a number of environmental subjects have been included in curricula. An educational standard on an Ecology subject has been approved. Training and retraining courses are organized on a regular basis in Azerbaijan for civil servants. Azerbaijan has decided to develop in 2011–2012 a State programme on environmental education and awareness-raising. Much remains to be done. Given the lack of a conceptual approach to environmental education in schools, it is doubtful whether the majority of school graduates will gain

a holistic understanding of environmental concerns. Existing curricula and teaching aids do not comply with up-to-date requirements. Azerbaijan has not adopted a national strategy on education for sustainable development (ESD), as recommended by the UNECE Strategy on ESD. No inter-agency commission or expert group involving all stakeholders has been established in Azerbaijan to develop and promote the subsequent implementation of a national strategy.

Recommendation 3.6:

a) *The Ministry of Education and the Ministry of Ecology and Natural Resources should*

use the process of the development of a State programme on environmental education and awareness-raising to start a debate, involving all stakeholders including the mass media and NGOs, on priorities for the promotion of education for sustainable development in the country;

b) *To better structure such a debate, a national commission on education for sustainable development should be established. The commission should also be entrusted with the preparation of the national strategy for ESD.*

Chapter 4

IMPLEMENTATION OF INTERNATIONAL AGREEMENTS AND COMMITMENTS

4.1 Main achievements since the first EPR

Between 1995 and 2003, Azerbaijan acceded to or ratified 14 major multilateral environmental agreements (MEAs)². Since then, and in line with the recommendations made in the first Environmental Performance Review (EPR) in 2003, Azerbaijan has mainly focused on the implementation of MEA provisions. The country has made substantial progress in implementing some of the MEAs in its priority areas (see section 4.2), but for others implementation has barely started.

Azerbaijan further acceded to the Convention on the Transboundary Effects of Industrial Accidents in 2003, the Stockholm Convention on Persistent Organic Pollutants in 2004, the International Convention for the Prevention of Pollution from Ships (Marpol Convention) in 2004 and the Cartagena Protocol on Biosafety under the Convention on Biological Diversity in 2005.

For several MEAs, Azerbaijan has developed or is developing strategic documents that allow for coordinated implementation of the respective commitments; for other conventions, however measures are mostly taken ad hoc and in reaction to requests made by the MEA secretariats instead of in pursuit of a proactive implementation strategy. Furthermore, further improvement is needed with regard to collaboration with MEA secretariats and compliance with reporting obligations.

Due to its fast-growing GDP per capita, Azerbaijan now falls into the category of lower-middle income countries. The Government could substantially increase the budget spent on environmental issues and decrease dependence on international assistance, allowing it to play a more directive role in relation to its cooperation partners and increasingly purchase the specific services they provide.

4.2 Priorities and policy framework

The 2006 Presidential Decree on Additional Actions in Regard to the Issues Emerging from International Conventions and Agreements on Environment sets the main priority actions for the years 2006–2010 for most of the MEAs to which Azerbaijan is a party.

The State policy documents do not list specific areas for international environmental cooperation. Specific policy documents supporting the implementation of international agreements have been developed for some sectors. However, the following priority areas are highlighted:

- (a) Harmonization with EU laws and implementation of modern environmental policies
- (b) Protection of the Caspian Sea
- (c) Waste management, including transboundary movement of hazardous waste
- (d) Protection and management of water resources, including transboundary waters
- (e) Preservation of biological diversity
- (f) Bilateral cooperation with neighboring countries and important partner and donor countries

4.3 Institutional and legal framework

The Ministry of Ecology and Natural Resources (MENR) is the main body for international environmental cooperation and is the focal point to most environment-related international conventions. Only international conventions related to the marine environment as the 1973 Convention for the Prevention of Pollution from Ships (MARPOL) are within the responsibility of the State Maritime Administration.

Other parts of the Government involved in international environmental cooperation and the implementation of international conventions are the Cabinet of Ministers (e.g. coordination of ministries), the Ministry of Foreign Affairs (e.g. approval of international agreements or projects), the Ministry of Agriculture (e.g. productive use of land, irrigation, persistent organic pollutant pesticides, biodiversity of crops and livestock), the Ministry of Health (e.g. drinking water

² Annex II lists the MEAs to which Azerbaijan is a party.

and sanitation), the Ministry of Emergencies (e.g. preparedness and response to industrial accidents), and the Academy of Science (e.g. scientific work on biodiversity).

The process of ratifying a new multilateral environmental agreement is usually initiated by a relevant department within MENR (or could alternatively be initiated by an NGO) with a proposal. The international department is coordinating the consultation process for preparing a proposal within MENR, which needs to be signed by the Minister before it is sent to the Ministry of Foreign Affairs for approval. The Cabinet of Ministers consults with the relevant ministries, and in the event of a positive decision, the President decides after approval which ministry would be the focal point. The President, the Prime Minister or the Ministry of Foreign Affairs on his behalf, signs the Convention and the Parliament ratifies it.

At the moment of review, there was no donor coordination for environmental matters.

4.4 International cooperation on environmental issues of national importance

Biodiversity

The Caucasus is recognized as one of the 25 biologically richest and most endangered terrestrial ecosystems of the world. The Government attaches high importance to biodiversity and nature conservation, and has acceded to various international agreements (Chapter 9).

Since 2000, the country has been a party to the Convention of Biological Diversity (CBD); it reported to the Convention secretariat in 2004 and 2010 but failed to submit two requested reports in between. The reports include an inventory of ecosystems and species, including agro-biodiversity species.

According to the reports to the CBD, more than 10 per cent of the plants and many fauna species are considered to be in danger of extinction. So far, the second edition of the Red Data Book, which will update the 1989 first edition, is not yet finalized. Project funding from the Global Environmental Fund (GEF) supported the preparation of the first national report and also the drafting of the National Strategy and Action Plan on Conservation and Sustainable Use of Biodiversity. The latter, adopted in 2006, defined activities for the period from 2006 to 2009, many of which have already been implemented.

Azerbaijan's main focus in implementing the CBD is on conservation of its biodiversity through the establishment of protected areas. Since 2003, the protected areas have more than doubled from 4.5 to 10.5 per cent of the total area of the country in 2010, but effective management is often still lacking. Further activities are the inclusion of ecological topics in school curricula. Less work was done on using biodiversity in a sustainable manner or access and benefit-sharing and biodiversity mainstreaming. Azerbaijan is in the process of deciding whether or not to develop a second national biodiversity strategy and action plan, which might take these areas in account.

At present, no specific law on biodiversity exists, but a number of laws and regulations, including the 2004 Law on Hunting and the 2009 Law on Beekeeping, refer to the conservation and sustainable use of flora and fauna (Chapter 9). Biodiversity protection is also an important area of the Tehran Framework Convention for the Protection of Marine Environment of the Caspian Sea, where Azerbaijan is involved in the negotiation of a Protocol on Biodiversity Conservation (see section 4.5). A GEF/UNDP project on marine and coastal ecosystem protection is in preparation.

Azerbaijan furthermore participates in the Pan-European Biological and Landscape Strategy and related capacity-building exercises. A conference on the International Year of Biodiversity was held in Gabala in July 2010 to ensure a pan-European contribution to the General Assembly meeting in September 2010.

Azerbaijan acceded to the Cartagena Protocol on Biosafety under the CBD in 2005. An assessment and gap analysis showed that no legal basis for biosafety issues exists in Azerbaijan. With the involvement of the public and the support of international experts, a law was drafted, but so far no consensus has been achieved. The main area of disagreement is the import of genetically modified seeds, which is opposed by a big share of the public.

Azerbaijan has acceded to the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitats in 1991 and submitted in 2001 two wetlands for inclusion on the Ramsar list of wetlands of international importance (Agh-Ghol - 18,000 ha and Ghizil-Agaj - 99,000 ha). The status of Ag-Gol State Reserve and Ag-Gol State Game Reserve was upgraded to a national park and its area has been increased from an initial 4,400 ha to almost 18,000 ha. An action plan is expected to be ready by

mid-2011. Wetlands around Lake Sarisu, Tufandagh glacier, Lake Mahmudchala and the Mingechevir water reservoir are to be added to the Ramsar list for the 40th anniversary of the Convention.

Azerbaijan is located on the route of many migratory birds. To ensure migratory paths, Azerbaijan acceded in 2000 to the Bern Convention on the Conservation of European Wildlife and Natural Habitats. To become part of the Emerald Network, a joint European Commission and Council of Europe project for the Caucasus is identifying areas of special conservation interest (Chapter 9).

Azerbaijan has undertaken steps to implement the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): MENR has been designated as the administrative authority and the Academy of Science as the scientific authority. The 2009 Order of the Cabinet of Ministers approved the rules on regulation of international trade with endangered species that brought the legislation in line with the obligations of the Convention, and customs officers were trained accordingly. A rescue center for confiscated animals has been established but is not yet fully functional. For 2005/2006 and 2007/2008, Azerbaijan failed to submit biennial reports. The regional Commission on the Biological Resources of the Caspian Sea, which includes the littoral states of Azerbaijan, Kazakhstan, the Russian Federation and Turkmenistan and (since 2002) the Islamic Republic of Iran, sets quotas for exporting sturgeon. In 2008, the quota set was not fully used up, and in 2009 no quota has been set (Chapter 9).

The high importance Azerbaijan attaches to biodiversity and nature conservation is accentuated by the MENR proposal for accession to the European Landscape Convention and the Bonn Convention on the Conservation of Migratory Species of Wild Animals. A final decision is expected to be taken in 2010.

With the growing number of biodiversity-related agreements to which Azerbaijan is a party, national authorities would have to place special attention on coordinating activities for the implementation of these agreements and on using synergies efficiently. For example, Tematea is a useful tool supporting a coherent implementation for the cluster of biodiversity-related conventions.

Climate change

Azerbaijan ratified the United Nations Framework Convention on Climate Change (UNFCCC) in

1995 and joined its Kyoto Protocol in 2000 as a Non-Annex 1 country. The second communication to the UNFCCC secretariat has been prepared by the National Hydrometeorological Department under MENR with the backing of the United Nations Development Programme (UNDP)/GEF and was under inter-ministerial consultation at the time of the review. It includes a greenhouse gas inventory for the years from 1990 to 2005, climate change scenarios and adaptation measures. Based on the second communication, the preparation of a national action plan on mitigation and another one on adaptation is being planned.

As the energy sector is the main source of greenhouse gases in Azerbaijan, in 2004 the Government adopted the State Programme on Use of Alternative and Renewable Energy Sources, which includes activities to identify suitable renewable energies for Azerbaijan, and undertook some capacity-building activities. In 2005, it adopted the State Programme on Development of Fuel and Energy Complex. The National Programme on the Rehabilitation and Expansion of Forests (2008) covers measures to mitigate climate change and the State Programme on Hydrometeorology includes actions for improved climate monitoring, but so far neither a comprehensive mitigation nor an adaptation strategy has been worked out.

MENR is the Designated National Authority (DNA) for the Clean Development Mechanism (CDM) and its Climate Change and Ozone Centre acts as the secretariat. Azerbaijan has signed memoranda with Denmark and Germany and plans to sign further memoranda with other countries. A carbon fund has been planned but not yet established. Thirty-four projects with a potential reduction of 19 million tons of CO₂ equivalents have been proposed (Table 4.1), but only 4 projects have reached the validation stage. After ministerial approval, they will be submitted to the UNFCCC secretariat. Low incentives for companies in view of the booming economy and the burdensome administrative process connected with the risk of rejection at some point of the process are perceived as the main bottlenecks.

Land degradation

Land degradation by erosion, swamping, salinization or chemical pollution is a major environmental problem for Azerbaijan that has worsened in recent years. As a party to the United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD), Azerbaijan submitted its third

report in 2006. Various strategic programmes include actions to combat desertification such as the National Programme on Restoration and Expansion of Forest Rehabilitation and Plantation of New Forests, the National Programme on Environmentally Sustainable Socio-Economic Development or the State Programme on Socio-Economic Development of Regions or the State Programme on Efficient Use of Summer-Winter Pastures, Hayfields and Prevention of Desertification. However, there is a clear gap between measures planned and activities implemented. The main reason is the lack of coordination between the key authorities (Ministry of Agriculture, Ministry of Ecology and Natural Resources, State Committee for Land and Cartography, and State Committee for Amelioration and Water Management).

UNDP has implemented a project with Norwegian and GEF funding supporting the preparation of a national action plan to combat desertification, which is expected to be approved in 2010. One of the priorities for land degradation identified by the project is the management of summer and winter pastures. The number of grazing animals has increased steadily over the last decades (the number of sheep per ha was 2.5 times higher in 2008 than in 1982), clearly exceeding the carrying capacity of the pastures. It is estimated that some 60 per cent of winter pastures and 70 per cent of summer pastures are now eroded, and significant areas of pasture land have become salt-affected marshlands. A new GEF project to improve the management of summer and winter pastures, particularly on the local level, is being discussed. However, the lack of common national objectives to prevent land degradation in the country might hamper international support in this field.

Air protection and ozone layer protection

The extractive industry and traffic are the main sources of air pollution in Azerbaijan, with the former decreasing but the latter increasing. Azerbaijan is a party to the Convention on Long-range Transboundary Air Pollution since 2002 but has not yet ratified any of its protocols. The Government wants to focus more on air pollution and intends to ratify the protocols in the near future, starting with the Protocol on Heavy Metals. To improve its monitoring system, Azerbaijan will acquire ten automatic stations and one EMEP³ (European Monitoring and Evaluation Programme) station, which will allow the measurement of particulate matters or ground level ozone (Chapters 3 and 6).

Azerbaijan ratified the Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer, including the London and Copenhagen amendments, in 1996. The ratification of the Montreal Amendment followed in 2000 and now the Beijing Amendment has reached the ratification phase. Azerbaijan could not always comply with its ozone-depleting substances (ODS) phase-out strategy, but has improved performance in recent years. Since 2006, imports and exports of ODS have been prohibited by a Presidential Decree. Azerbaijan has been able to reduce consumption of chlorofluorocarbons (CFCs) since the last EPR, but has not indicated methyl bromide consumption and hydrochlorofluorocarbons (HCFCs) are still consumed – a complete phase-out is planned for 2030. Two regional GEF projects are supporting the phase-out of HCFCs by carrying out surveys on HCFCs consumption and assisting with the set-up of according corresponding strategy.

³ Cooperative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe

Table 4.1: Registered proposals for CDM projects

Sector	Number of project proposals	GHGs reduction rate, thousand tons/year CO ₂ equivalent
Total	34	19,131
Energy, including	17	13,675
Alternative energy	9	1,775
Agriculture	2	3,331
Wastes	3	287
Forestation and afforestation	3	63

Source: Draft Second National Communication to the United Nations Framework Convention on Climate Change. Baku, 2009.



Baku Bay

Water resources

Water management of transboundary rivers (Araz, Kura and Samur rivers) remains a high priority for Azerbaijan, but related problems are still mostly unsolved. The Kura River, which is the main source of drinking water and for agriculture and industry, enters the country already polluted. Azerbaijan acceded to the Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes in 2000 in order to support multilateral solutions, but Armenia and Georgia are still not parties to the Convention.

Azerbaijan is a party to an agreement with Georgia on Lake Gandar, with the Islamic Republic of Iran on the Araz River and with the Russian Federation on the Samur River. Azerbaijan and the Islamic Republic of Iran have established a joint commission and undertake joint monitoring exercises. The agreement renegotiated with the Russian Federation has not yet been adopted. As Azerbaijan and Armenia do not maintain diplomatic relations, no agreement exists on the use of the Araz River. Nor is there any agreement on the Kura River.

A number of projects deal with transboundary water management issues. A project financed by the Technical Aid to the Commonwealth of Independent States (TACIS) programme supports monitoring and assessment of water quality, which led to joint monitoring activities of Azerbaijan with Georgia on the Kura River. A regional GEF project aims to reduce the transboundary degradation of the Kura-Araz river basin and improve water quality and quantity. A regional UNDP project concerns best practices of transboundary water management through regional and national strategic action programmes. A United Nations Economic Commission for Europe (UNECE)/Organization for Security and Co-operation in Europe (OSCE) project is aimed at reaching an agreement on transboundary watercourses shared by Azerbaijan and Georgia, and a United States Agency for International Development (USAID) project supports the dialogue between Armenia, Azerbaijan and Georgia on transboundary water management.

Azerbaijan has ratified the Protocol on Water and Health of the Helsinki Convention in 2003. In 2010, the country reported on the status of its implementation. To comply with the provisions of the Protocol on Water

and Health, Azerbaijan should set targets related to the quality of drinking water supplied, which has not yet been done.

In the 2008 State Programme on Poverty Reduction and Economic Development, which is meant to define actions to achieve the Millennium Development Goals (MDGs), Azerbaijan set goals to ensure reliable water supply and sanitation for all. A World Bank loan worth US\$ 230 million will support these goals in 21 selected districts outside the Greater Baku area. On the regulatory level, Azerbaijan wants to bring its legislation on water in line with the EU Water Framework Directive (Chapter 7).

As recommended by the last EPR, Azerbaijan ratified the International Convention for the Prevention of Pollution from Ships (MARPOL), including all six of its annexes, in 2004. The State Maritime Administration is the authority responsible for its implementation. A regional TACIS project has supported maritime training centres in Azerbaijan to promote shipping safety and prevent marine pollution. Azerbaijan plans to identify special sites (as defined in Annex 1) that are particularly vulnerable to oil pollution.

Waste and chemicals management

Azerbaijan has given high priority to waste management in recent years and has accordingly taken various steps to implement the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, to which the country acceded in 2001. A 2007 amendment to the 1998 Law on Industrial and Municipal Waste and various resolutions of the Cabinet of Ministers have been adopted, dealing with hazardous waste passports, rules for the cleaning of urban and residential areas, the management of medical waste, the inventory of industrial waste, the transboundary transport of hazardous waste and the setting of fees for collection, separation, recycling and disposal of waste (see Chapter 8).

In 2004, the Cabinet of Ministers approved the State Strategy on the Management of Hazardous Waste, which guides and prioritizes activities, many of which have already been implemented. MENR has partially introduced a classification system based on the Basel Convention, but the former classification system is still in place as well and the State Statistical Committee intends to introduce the European Union classification system, all of which have led to confusion. A database on the export, import and movement of hazardous waste and rules on transboundary shipment has been established. As a next step, MENR plans to establish

rules for the registration of producers of hazardous waste and the storage of hazardous waste.

In 2004, Azerbaijan acceded to the Stockholm Convention on Persistent Organic Pollutants (POPs). A National Implementation Plan for the period 2007–2020 was established with the support of the United Nations Industrial Development Organization (UNIDO) as part of a GEF project, but Azerbaijan only officially submitted it to the Convention in 2010. It includes a basic inventory of POPs in Azerbaijan and defines areas of actions, including the phase-out of POP-based pesticides, the landfilling of polychlorinated biphenyl (PCB), remediation measures for POPs produced unintentionally in waste, industry, energy, and the transportation sector, the development of a strategy on the remediation of contaminated areas, legal actions, POP monitoring and public awareness-raising. Two projects are in the pipeline related to the implementation plan. A UNIDO project is on landfilling and treatment of PCB containing equipment and PCB liquid wastes, while the United Nations Food and Agriculture Organization (FAO) will support the phase-out of DDT, which is still stored in obsolete stockpiles. Azerbaijan should further adopt a law on POPs in order to fill the various gaps that have been identified in existing laws in the National Implementation Plan.

MENR has initiated the internal process to accede the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

Risk management

Azerbaijan acceded to the Convention on the Transboundary Effects of Industrial Accidents in 2004; however, of the neighboring countries only Armenia, with which Azerbaijan does not maintain diplomatic relations, is a party to the Convention. While MENR is the focal point for the Convention, the Ministry of Emergency Situations is in charge of identifying and registering hazardous industrial facilities and ensuring preparedness and response to industrial accidents. Azerbaijan has fulfilled the basic tasks under the Convention, which are a precondition for acceptance in the second phase and receive support from the Assistance Programme to help countries from Eastern Europe, the Caucasus and Central Asia and South-East Europe implement the Convention. As a first measure, the Assistance Programme will build capacity for identifying hazardous activities, an endeavour upon which Azerbaijan has already embarked.

Azerbaijan is further involved in the negotiation of a protocol on regional preparedness, response and cooperation in combating oil pollution incidents under the Framework Convention for the Protection of Marine Environment of the Caspian Sea, which will support cooperation between Caspian Sea littoral states in the event of oil pollution incidents.

Transboundary environmental impact assessment

In 1999, Azerbaijan acceded to the Espoo Convention on Transboundary Environmental Impact Assessment (EIA). All of Azerbaijan's neighbouring countries (Armenia, Georgia, the Russian Federation and Turkey), apart from the non-UNECE member country the Islamic Republic of Iran, are parties to the Convention as well. In the absence of legislation on EIA, the 1996 Handbook for the EIA Process is still the normative basis for EIA procedures in Azerbaijan. The lack of legislation was discussed by the Implementation Committee of the Convention after the second review of implementation and led to an initiative by the Committee, which is exploring possibilities to provide technical advice to review current and draft Azerbaijani legislation on EIA in detail. A law on ecological expertise establishing a legal basis for environmental impact assessment and including its transboundary form is still in the drafting stage. At the time of the review, transboundary EIA had never been applied. Under the Framework Convention for the Protection of Marine Environment of the Caspian, Azerbaijan is involved in the negotiation of a protocol on EIA in a transboundary context.

Azerbaijan has not yet acceded to the Protocol on Strategic Environmental Assessment (SEA) under the Espoo Convention. A UNDP project will support the drafting of SEA laws and regulations and the implementation of pilot SEA projects for demonstration purposes.

Public participation

In reports from 2005 and 2008 to the secretariat of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, the Government provided information on progress in implementing the provisions under the Convention, which Azerbaijan ratified in 2000. The 2003 Law on Access to Environmental Information, the 2005 Law on Access to Information and the 2005 Law on Public Administration stipulate the rights of the public to access environmental information. With the support of the Organization

for Security and Cooperation in Europe (OSCE), in 2003, an Aarhus Public Information Centre was created on MENR premises, and in 2007, branches were established in Ganja and Gazakh. The centres provide information about environmental issues to the public through a library, Internet access and meetings of the Government with NGOs or associations. At the moment, a comprehensive national report on the state of the environment, which is one of the provisions of the Aarhus Convention, has not yet been published. Compared to the situation in 2003, NGOs and science representatives are more involved in the preparation of policies, but the right to have access to judicial proceedings is rarely used.

Recently, MENR initiated the internal process to accede the Protocol on Pollutant Release and Transfer Registers under the Aarhus Convention.

Others

Since 1998, Azerbaijan has also been a party to the Convention for the Protection of the World Cultural and Natural Heritage. Thanks to a successful management effort, the Walled City of Baku is no longer on the UNESCO List of World Heritage Sites in Danger. In 2007, the Gobustan Rock Art Cultural Landscape was inscribed on the World Heritage list, but no natural sites have been included.

4.5 Bilateral and regional cooperation and international assistance

Caspian Sea

In 2006, the Tehran Framework Convention for the Protection of the Marine Environment of the Caspian Sea entered into force after it was ratified by all five Caspian Sea littoral states (Azerbaijan, Islamic Republic of Iran, Kazakhstan, Russian Federation and Turkmenistan). That same year, Azerbaijan ratified the Convention in question, of which the UNEP Regional Office for Europe hosts the interim secretariat. The objective of the Convention is the protection of the Caspian Sea environment from all sources of pollution and the protection, preservation, restoration and sustainable and rational use of the Caspian Sea's biological resources. Azerbaijan has played an active role in the negotiations of the Convention as well as in the four protocols under ongoing negotiations:

- (a) Protocol on Land-based Sources of Pollution
- (b) Protocol on Biodiversity Conservation
- (c) Protocol on Environmental Impact Assessment in a Transboundary Context

(d) Protocol on Regional Preparedness, Response and Cooperation in Combating Oil Pollution Incidents

The last two protocols are the most advanced and are due to be adopted and signed at the third Conference of Parties in Astana in September 2010. The Espoo Convention secretariat supports the finalization of the Protocol on EIA in a Transboundary Context.

Two GEF projects have supported the policy development process of the Caspian Environment Programme (CEP), during which in a first phase a regional Strategic Action Programme (SAP) and National Caspian Action Plans (NCAP) were developed. In a second phase, a Strategic Convention Action Programme (SCAP) was endorsed by the second Conference of Parties in 2007. The SCAP is a comprehensive, long-term agenda and framework for the implementation of the Tehran Convention and its Protocols over a period of 10 years to be translated and implemented through National Strategic Convention Action Programmes (NSCAPs). Major areas covered are the prevention, reduction of pollution and control of polluting activities from land-based sources, seabed activities, vessels, pollution caused by dumping, the protection, preservation and restoration of the marine environment, control of invasive species and emergency preparedness.

Azerbaijan has already undertaken several activities to comply with the provisions of the Convention: The Caspian Sea complex environmental monitoring administration has identified 341 streams flowing into the Caspian Sea, which it intends to monitor regularly. Sixteen small-scale wastewater treatment plants have been installed in the northern part of Absheron Peninsula.

The third GEF project, which began recently, aims at strengthening the regional environmental governance framework in order to hand over full ownership of the CEP to the Caspian Sea littoral States, while a second project component deals with the ecosystem-based management of the aquatic bio-resources of the Caspian Sea in order to restore depleted fisheries in the Caspian Sea.

Bilateral and multilateral cooperation

Bilateral agreements on environment-related issues play an important role for Azerbaijan and have been set up in great numbers in order to gain and exchange expertise and technology. The most important areas of cooperation are water protection, the management of

natural parks, waste management and soil remediation. France, Germany, Israel and Republic of Korea are among the most important partner countries. The major bilateral donors for environmental cooperation are Canada, France, Germany, Norway and the United States of America.

Azerbaijan cooperates with various international organizations, such as the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP), the United Nations Industrial Development Organization (UNIDO), the United Nations Food and Agriculture Organization (FAO), the Organisation for Economic Co-operation and Development (OECD), the North Atlantic Treaty Organization (NATO), and the Organization for Security and Cooperation in Europe (OSCE) on environmental matters. As far as GEF is concerned, Azerbaijan, along with other Central Asian countries and Switzerland, forms a Constituency, which is represented by Switzerland on the GEF Council. A similar representation system is used in the World Bank. Due to its geographical position and political reasons, the country is a member of both the United Nations Economic Commission for Europe (UNECE) and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), as well as of the European Bank for Reconstruction and Development (EBRD) and the Asian Development Bank (ADB).

Cooperation with the European Union

Azerbaijan attaches high priority to cooperation with the European Union (EU). Azerbaijan was included in the EU Neighborhood Policy in 2004. The National Indicative Programmes for the periods 2007–2010 and 2011–2014 define priority areas and related objectives for which the EU is providing grant-financed technical assistance. The harmonization of its legislation with EU law is an important component of Azerbaijan's cooperation with the EU. While in recent years EU legislation has usually been studied and taken into account when drafting new legislation, the Government has approved the Plan of Actions on Approximation of Legislation with that of the European Union for the period 2007–2010, which will systematically compare EU with national legislation. Many EU directives in environmental areas have already been translated into Azeri.

“Environment for Europe” process

Azerbaijan participated at the Sixth Conference “Environment for Europe”. The country has been actively participating in the UNECE Committee on

Table 4.2: Targets and indicators of MDG 7 for Azerbaijan

Strategic Goal (*)	Targets	Indicators and baselines
Improving the environmental situation and ensuring sustainable environmental management	Increase the proportion of forest areas to total land area to 12.5 per cent by 2015	Proportion of forest areas in total land area: 11.5 per cent (2007)
	Increase the share of protected land area in the total surface area to 12 per cent by 2015	Share of protected land area in the total surface area: 8.1 per cent (2007)
	Decrease by 20 per cent the conditional fuel used for 1 KW of energy for reducing green-house emissions in the energy sector by 2015	Quantity of conditional fuel used for 1KW of energy: 386 gr (2006)
	Achieve treatment of 100 per cent of sewage in the country by 2015	Sewage treatment in large cities: 57.9 per cent (2006)
	Achieve 80 per cent recycling and neutralization of solid household wastes in the large cities by 2015	Share of recycled and neutralized solid household wastes in the large cities: 10.9 per cent (2006)
Developing social infrastructure, improving public utilities system	Create a reliable water supply system in the regional towns and villages by using local springs and ground water sources and supply the entire the population with water through a centralized water supply system by 2015	Share of population with reliable water supply system in the regional towns and villages: 46.5 per cent (2007)
	Provide aeration and sanitation services to all towns and settlements of the country by 2015	Share of population provided by the centralized sanitation services: 33.7 per cent (2006)

Source: State Programme on Poverty Reduction and Sustainable Development, 2008-2015. Baku, 2008.

Note: * Drinking water and sanitation-related targets, which are part of MDG 7, refer to the goal ‘Developing social infrastructure, improving public utilities system’ and not to the environment-related goal in Azerbaijan’s system.

Environmental Policy sessions for the preparation for the Seventh Ministerial Conference to be held in Astana in 2011. The two conference themes, namely “Sustainable Management of Water and Water related Ecosystems” and “Greening the Economy”, are of great interest for Azerbaijan due especially to its economic development and the challenges it faces on water issues.

4.6 Other international processes

Implementation of Agenda 21

In 2002, Azerbaijan adopted the National Programme on Environmentally Sustainable Socio-economic Development (NPESD). Prepared by MENR, the Programme defines actions for most of the chapters of Agenda 21 for the period 2003–2010. It is not yet sure if a second phase of the Programme will follow. At the local level, the State Programme on Socio-economic Development of Regions in Azerbaijan, led

by the Ministry of Economic Development, includes areas of Agenda 21. The first phase was from 2004–2008 while the successor Programme was for 2009–2013 (Chapter 1).

Millennium Development Goals

Azerbaijan’s main progress in achieving the Millennium Development Goals (MDG) by 2015 has been in eradicating extreme poverty and hunger (MDG 1) and achieving universal primary education (MDG 2). Related to the targets of MDG 7, which is about environmental issues, the main areas of progress have been a reduction of CO₂ emissions by GDP, reduced energy use, an ODS decrease and an increase in protected areas. Additional efforts are needed to improve access to drinking water and provide sanitation facilities in rural areas. Azerbaijan has displayed the political will to work towards the MDGs by establishing the State Programme on Poverty Reduction and Economic Development for the period 2003–2005. The Programme concluded with a

progress report (“Azerbaijan Progresses toward the Achievement of the MDGs”). The State Programme on Poverty Reduction and Sustainable Development, which was adopted in 2008 and is a long-term strategy until 2015, sets out concrete actions in regard to achieving the MDGs. Azerbaijan has set its own national goals, targets and indicators, of which some vary from the internationally defined ones (Table 4.2).

4.7 Conclusions and recommendations

Overall, Azerbaijan has made significant progress on international environmental cooperation since the last EPR in 2003. Azerbaijan has ratified further international conventions and protocols and the number of bilateral agreements is growing steadily. In the negotiation process of the Tehran Framework Convention for the Protection of the Marine Environment of the Caspian Sea and its Protocols, Azerbaijan is starting to play a more active role in international policy development. However, the main focus has been on implementing the international commitments made, for which thanks to a fast-growing GDP more Government funds were spent.

Azerbaijan has made substantial progress in implementing its international commitments under some MEAs (e.g. Basel Convention, CBD, CITES, Tehran Framework Convention), but work done under other international conventions has been very limited (e.g. Convention on Long-range Transboundary Air Pollution, Stockholm Convention, Espoo Convention) and often without strategic planning. Instead of proactive implementation, activities have only been undertaken at the request of MEA secretariats. To ensure that the secretariats effectively support Azerbaijan’s efforts to implement its international commitments, reliable communication is a precondition. In the past, Azerbaijan did not always comply with its reporting duties under the MEAs.

Recommendation 4.1:

The Ministry of Ecology and Natural Resources and other institutions involved in environmental matters should fulfill commitments under the MEAs including compliance with reporting requirements concerning content and deadlines to their secretariats and ensure reliable communication.

Azerbaijan is a party to a number of MEAs and intends to accede to or ratify other international agreements. Implementing obligations to all various agreements will challenge the country’s capacity if the country does not make use of synergies between the international agreements in a planned and effective way. Particularly

in the area of biodiversity conservation, Azerbaijan is a party to a relatively high and still growing number of Conventions. To support rational implementation and to address similar environmental implementing obligations for the cluster of biodiversity-related agreements, various organizations working on biological conservation have developed a tool in order to implement biodiversity-related agreements in a coherent fashion.

A good example of the need for further cooperation is land degradation. Despite efforts undertaken by the Ministry of Ecology and Natural Resources, land degradation continues to pose a major challenge to Azerbaijan. Conflicts of interest and coordination problems between the Ministry of Ecology and Natural Resources and the Ministry of Agriculture impede the successful implementation of the necessary measures to stop land degradation and its negative medium to long-term impact on food security. However, the Ministry of Ecology and Natural Resources would consider exchanging information with other relevant Ministries and implement joint activities in the area of sustainable land management

Recommendation 4.2:

The Ministry of Ecology and Natural Resources should submit for approval to the Cabinet of Ministers written guidelines on coordination with other governmental agencies and institutions of the implementation of MEAs.

At the time of the second EPR, Azerbaijan had not developed a climate change strategy for mitigation of greenhouse gas emissions or adaptation to climate change. The assistance of international specialized agencies might become available, if needed.

The country can take advantage of the benefits of flexible mechanisms under the Kyoto Protocol. As the country’s energy efficiency is still low, cost-effective reduction of greenhouse gas emissions is possible through the Clean Development Mechanism. Simplified modalities and procedures for small-scale CDM project activities reduce the administrative burden.

Recommendation 4.3:

In cooperation with relevant stakeholders, the Ministry of Ecology and Natural Resources should:

- (a) *Develop the second National Communication to the United Nations Framework Convention on Climate Change;*

- (b) *Develop national strategies on adaptation and mitigation to climate change taking into consideration evidence and analysis identified by the forthcoming second National Communication;*
- (c) *Make further efforts to raise awareness of potentially interested and relevant stakeholders about potential mechanisms, such as the clean development mechanism, GEF, Adaptation Fund, and the Climate Investment Fund. It is also important to review the applicability of simplified modalities and procedures for small-scale clean development mechanism project activities of the proposed CDM projects, set up the planned carbon fund and speed up the implementation of CDM projects.*

Setting targets for drinking water and related issues is an important obligation of the Water and Health Protocol of the Helsinki Convention, which Azerbaijan has not yet fulfilled. National and local targets will help Azerbaijan achieve the goal of drinking water and sanitation for all, as set by the Protocol and in Azerbaijan's targets related to Millennium Development Goal 7.

Recommendation 4.4:

The Government should set and achieve national and local targets as requested by the Protocol of Water and Health of the Helsinki Convention by implementing accordingly programmes of measures.

* * * * *

Those following parts of recommendations from the first EPR of Azerbaijan that are still valid and their preceding conclusions are listed below.

Azerbaijan is actively developing international environmental cooperation in many areas with other

countries, international organizations and institutions. In addition to having signed and ratified a number of global and regional environmental conventions, Azerbaijan has established many bilateral and multilateral partnerships and has concluded numerous framework and sectoral agreements. In most areas, Azerbaijan is harmonizing its legislation with international and European norms, in accordance with the requirements of the international conventions that it has ratified as well as in view of its interest in joining the European Union. To further meet its international obligations, Azerbaijan has drawn up general and specific policy and action plans and sought foreign assistance in programme formulation and implementation. The principles of sustainable development are a good basis for integrating a large variety of related issues.

While the Ministry attaches importance to international legal instruments, implementing and complying with the new norms and action plans have not been a priority for all institutions concerned. An analysis will provide clearer goals and ultimately ensure a stronger commitment from the ministries involved. To improve the situation, strategic plans for implementation should be developed as soon as ratification is proposed. They should go beyond the mere translation of international commitments into national legislation and include funding commitments for implementation and compliance. Instructions, norms and standards as well as action plans should be used for the implementation of national laws and international agreements.

EPR I - Recommendation 4.1:

- (b) *The Ministry of Ecology and Natural Resources should assess the cost of implementation of a new international legal instrument for environmental protection before ratification in order to acquire the necessary resources.*

***PART II: ECONOMIC INSTRUMENTS
AND FINANCIAL RESOURCES***

Chapter 5

ECONOMIC INSTRUMENTS AND EXPENDITURES FOR ENVIRONMENTAL PROTECTION

5.1 Legal, institutional and policy framework

The first Environmental Performance Review (EPR) described the system of regulatory and economic instruments available for environmental purposes. These included (i) emission charges for air pollution, wastewater generation and waste disposal; (ii) user charges, taxes on the extraction and use of natural resources; and (iii) penalties and compensation for environmental damage. There have not been any significant changes in this basic legal framework, in particular regarding pollution charges, although penalties were increased in 2007. User charges have also been raised and new rules have been introduced for the calculation of waste fees.

The legal foundations for the use of economic instruments for environmental protection and the main principles guiding environmental expenditure can be found in the 1999 Law on Environmental Protection. Art. 22 establishes the legal basis for the introduction of a number of financial mechanisms to protect the environment, including payments for the use of natural resources, payments and charges for environmental pollution, economic incentives, funds for environmental protection, grants and the use of international funds allocated for environmental protection. Resources from fines are earmarked for the financing of environmental protection measures.

Art. 25 of the Law on Environmental Protection envisages the utilization of economic incentives, including subsidies and other similar measures. In addition, Art. 26 introduces the possible use of ecological insurance as protection against the consequences of activities that represent a serious environmental risk.

The Law also identifies the sources for the financing of environmental programmes, which according to Art. 23 include State and local budgets, environmental protection funds, ecological insurance, payments for the use of nature, donations from physical and legal persons and grants and other resources from international institutions. Art. 24.4 stipulates that

budgets at all levels should indicate separately their expenses for funding environmental protection measures.

Environmental protection funds can be established to finance environmental protection, rehabilitation and compensation measures, according to Art. 27. Sources of revenues for these funds include payments for nature use, property confiscation, sales of the results of illegal hunting, grants and donations and other sources that do not conflict with legislation.

The Law identifies a number of areas in which these resources can be used, including the introduction of resource-saving technologies, rehabilitation of infrastructures, compensation for environmental damage, training, environmental auditing and the provision of incentives to those who work in the area of environmental protection. In any case, the financing of activities not related to environmental protection is prohibited.

The Ministry of Ecology and Natural Resources (MENR) has overall responsibility for implementing State policy regarding the protection and use of natural resources and environmental safety and helping define State programmes in these areas. It exerts monitoring and control functions, including in relation to ecological insurance contracts.

The Ministry of Economic Development elaborates the main strategic directions for socio-economic development, inter alia with regard to State investments. The Ministry of Finance controls the use of public funds, including off-budget and special purpose funds. The Ministry of Agriculture is responsible for irrigation, water economy issues and land use policies. There is no independent regulatory body for setting energy and utilities prices. This role is performed by the Tariff Council, which comprises representatives of various ministries and State committees, under the chairmanship of the Ministry of Economic Development. The State Oil Fund of Azerbaijan finances some expenditures with environmental significance. State-owned companies,

in particular the State Oil Company of Azerbaijan (SOCAR), are tasked with the implementation of specific environmental measures.

There are a number of environmental policy documents which outline various actions and have served as a basis for environmental spending. These include the 2006 State Programme on Environmentally Sustainable Socio-Economic Development and the Comprehensive Action Plan on Improvement of the Environmental Situation for the period 2006–2010, adopted via Presidential Decree No. 1697 of 28 September 2006. The latter is known as the Environmental State Programme, with a primary focus on the Absheron Peninsula. The plan involves clean-up, remediation and environmental management measures.

There have been also plans with a specific focus on particular environmental issues, including the 2003 State Programme on Reforestation and Afforestation for the period 2003–2008 (approved by Presidential Decree No. 1152 of 18 February 2003) and the 2006 National Strategy and Action Plan on Biodiversity Conservation and Sustainable Use for the period 2006–2009.

In addition, there are a number of general development programmes in which environmental priorities are recognized, including the State programmes for Poverty Reduction and Sustainable Development for the period 2003–2005 (SPPRSD) and for the period 2008–2015 (SPPRSD-II) and the 2009 State Programme for Socio-Economic Development of the Regions for the period 2009–2013. These concern both reforms in the system of incentives and projected public investment. SPPRSD II envisages changes in the legal and regulatory framework to attract investment in public utilities. In addition, there are also plans to develop a strategy to utilize solid industrial, agricultural and household waste as secondary raw material, a source of energy and construction materials. The 2004 State Programme on the Use of Alternative and Renewable Energy Sources for the period 2005–2013 contemplates the use of appropriate feed-in tariffs to encourage the development of renewable energy.

5.2 Use of economic instruments for environmental objectives

Economic instruments include taxes on natural resources and environmentally significant products and emission charges.

Taxes

According to the Tax Code, as amended in 19 June 2009, there are a number of taxes with environmental significance, including excises, the road tax, the land tax and the mining (royalty) tax (table 5.1).

Art. 190 of the Tax Code describes excises on a number of products with environmental impact, including oil products and transport vehicles (section on transport). Rates are determined by law, with the exception of those concerning imports of light vehicles, which are fixed directly in the Tax Code.

Foreign enterprises owning vehicles entering the territory of Azerbaijan and domestic owners of vehicles pay a road tax. For residents, the rate reflects differences in engine volume. Agricultural equipment and vehicles owned by budget-financed organizations are exempt. For foreigners, the tax depends on the type and size of vehicle and the number of days spent in Azerbaijan. For heavy vehicles and cargo transportation, the tax base is the distance covered while in Azerbaijan, with a progressive scale that depends on the weight of the vehicle and the number of days. The revenue raised through this tax is not used for environmental purposes but, together with a number of other vehicle-related taxes, duties and charges, accrues to the Road Fund.

The land tax (Art. 203) depends on the size of the plot. A scoring system is used for agricultural land, according to which points are allocated on the basis of the use, geographical position and quality of lands. The tax rate is equivalent to 0.6 manat per point. For other activities and land owned by physical persons, the tax base is the size of the plot and rates are differentiated according to the location, being higher in Baku and large cities and lower in smaller settlements. Land owned by physical persons and housing funds benefits from much lower rates. For example, in Baku, citizens only pay 0.6 manat per 100 m² against 10 manat for other types of users. Land used by public authorities or budget-financed organizations and forest and water reserves are exempted from the tax.

The land tax does not have an influence on the allocation of the land to different uses. It serves to extract part of the economic rents that accrue from the exploitation of the land. Therefore, its main impact is purely fiscal rather than environmental. Its significance as a source of revenue has declined steadily in the period under review, as the growth of the tax base has lagged behind the rapid expansion of GDP. With the exception of tax paid by physical

Table 5.1: Selected environmental revenues, 2004-2008

	thousand manat				
	2004	2005	2006	2007	2008
Mining tax	97,800	53,540	100,202	123,233	147,750
Land tax	14,100	15,268	18,821	27,288	30,790
Road tax	..	9,023	10,339	17,144	27,366
<i>As percentage of GDP</i>					
Mining tax	1.150	0.428	0.535	0.435	0.368
Land tax	0.165	0.122	0.100	0.096	0.077
Road tax		0.072	0.055	0.060	0.068

Source: Ministry of Tax, state Statistical Committee, 2010.

persons, which is allocated to local budgets, revenues accrue to the State budget.

A mining tax (royalty tax) is paid on the use of underground resources, including off-shore resources that are being exploited. For crude oil, gas and metals, the tax base is valued at wholesale prices, with rates of 26 per cent, 20 per cent and 3 per cent, respectively. For non-metallic resources, the rates are charged per m³, being differentiated according to the type of resource. Mineral waters are charged at a rate of six manat per m³.

Oil and gas are the most important natural resources in Azerbaijan. The rapid development of this sector in recent years has boosted economic growth and strengthened public finances, enabling increased public investment, including on environmental issues (see section on public spending). Most hydrocarbon resources are exploited under Production Sharing Agreements (PSAs), which establish specific tax and customs obligations and arrangements to allocate the oil and gas obtained between the participating foreign investors and the State Oil Company of the Azerbaijan Republic (SOCAR).

The proceeds from the sales of the resources accruing to SOCAR accumulate in the State Oil Fund of Azerbaijan (SOFAZ). Other sources of revenue for SOFAZ include bonuses and dividends paid under PSAs, acreage fees paid by foreign investors for the use of the contract areas in connection with the development of hydrocarbon resources, and returns on the management of its assets (Box 5.1).

Some of these revenues are transferred to the main State budget as a financing item. Such an arrangement provides clear visibility regarding the dependence of public finances on hydrocarbons revenues, thus making it possible to clearly identify the non-oil public budget balance. According to International Monetary Fund (IMF) data, hydrocarbon revenues accounted for almost two-thirds of consolidated central Government revenues in 2005–2008. In addition SOFAZ finances directly some expenditure with environmental significance (see section on public spending).

Azerbaijan was the first country to be considered as compliant by the Extractive Industries Transparency Initiative (EITI) in February 2009. EITI requires the regular publication of reports on revenues from

Box 5.1: The State Oil Fund of Azerbaijan

The State Oil Fund of Azerbaijan (SOFAZ) was created via presidential decree in December 1999 in response to the need to create a solid framework for public finances management. The main aim of SOFAZ is to accumulate resources for intergenerational sharing, since hydrocarbons resources are limited, and in this way to reduce macroeconomic pressures derived from excessive growth in foreign inflows and public spending.

SOFAZ has also financed major infrastructural projects, including those with environmental significance, and socio-economic programmes. SOFAZ is an off-budget institution whose activities are monitored by a supervisory board chaired by the Prime Minister. The Executive Director is appointed by the President, who approves the SOFAZ budget.

Resources accumulated in the fund had reached 35 per cent of GDP by the end of 2009. These resources are invested in various types of assets, generating a return of 309 million manat in 2009, equivalent to almost 1 per cent of GDP.

natural resources, subject to external audits according to international standards and a validation process.

Emission charges and other payments

Emission charges have been used as an economic instrument since the 1992 Presidential Decree No. 176 on the Introduction of Payments for Natural Resources, Payments for Emissions of Pollutants into the Environment and the Use of Funds from these Charges. The legal regime and procedure for the calculation of rates applicable to various types of substances was described in the first EPR. There have been no changes in this basic framework in the period under consideration.

Resources accumulated in the fund had reached 35 per cent of GDP by the end of 2009. These resources are invested in various types of assets, generating a return of 309 million manat in 2009, equivalent to almost 1 per cent of GDP.

Emissions and use of natural resources presuppose the existence of an administrative authorization that determines use and emission limits. There are also specific location coefficients that adjust charges to the environmental situation and significance of the area where the emission or discharge takes place. These charges are not considered part of the costs of a company but are paid out of profits. In addition, fines are levied for violations of environmental legislation, including the absence of permits authorizing emissions and defining their limits.

Emissions to air from stationary sources include 89 substances, but this list is not considered exhaustive, as charges can also be applied to similar substances not included there. Charges on air emissions from mobile sources are calculated on the basis of the consumption of various types of fuel.

The 1992 Decree further includes payments for water abstraction and discharge of wastewater. Charges are differentiated according to the source of water. For wastewater, discharges into the Kura River are charged at a rate that is 33 per cent higher than for other rivers and the Caspian Sea. These water charges are waived for some users, such as communal services, budget-financed organizations on surface and underground water, and the agro-industrial complex only on surface water.

While many substances are being monitored, there has been no attempt to determine the appropriate level and structure of charges leading to more

efficient instruments. These economic instruments are not connected to the achievement of specific environmental targets, as part of policy packages that also combine elements of a regulatory nature, but have only a revenue-raising dimension.

The first EPR already mentioned that pollution charges were too low to motivate polluters to reduce emissions and introduce new technologies. As rates are defined *ad quantum* (in relation to the amount of pollutant emitted), the significance of the pollution charges as an incentive for polluters to change their behaviour has been eroded by inflation. Pollution charges are determined as a fixed monetary amount per physical unit of pollutant and therefore do not change as the general level of prices in the economy increases. The 2006 Comprehensive Action Plan on Improvement of the Environmental Situation for the period 2006–2010 envisaged legal amendments that would bring rates into line with price changes and introduce new methods for calculating damage to the environment. MENR has asked the Cabinet of Ministers on a number of occasions for a revision of the current regime. However, such proposals have been repeatedly rejected.

Despite these limitations and the lack of any changes regarding the way in which pollution charges are determined, revenues from these charges have shown a positive trend in recent years. Average annual payments in 2008–2009 were more than three times larger than in the period 2003–2005 (table 5.2). This is a remarkable growth, taking into account that rates have remained unchanged and that there has not been a comparable increase in emissions.

Better payments compliance appears to have contributed to the positive trend observed with regard to revenues. While pollution charges were not modified, fines and penalties were increased in 2007. As a result, revenues from both pollution charges and fines and penalties showed rapid growth in 2008–2009, with the combined amount more than doubling in relation to the preceding two years. Both series appear strongly correlated, suggesting that fines and penalties have played a role in improving payment discipline. Revenues from penalties are rather large, accounting for some 60 per cent of aggregate revenue in 2003–2009. Greater centralization also seems to have contributed to the growth of revenues, following the reduction in the number of territorial units of the Department of Environmental Protection within the Ministry of Ecology and Nature Protection in 2003. This change reinforced control and supervision mechanisms to achieve revenue-raising plans.

Table 5.2: Penalties and pollution charges, 2003–2009

thousand manat

	2003	2004	2005	2006	2007	2008	2009
Total	223.4	561.6	341.6	414.0	454.1	1,031.4	950.4
Penalties	135.0	362.0	238.0	238.2	265.3	646.4	471.2
Pollution charges	88.4	199.6	103.6	175.8	188.8	385.0	479.2

Source: Ministry of Ecology and Natural Resources, 2010.

Product charges on environmentally harmful products can be an effective economic instrument as regards products that pollute when they are consumed or emissions that are difficult to monitor. With the exception of transport-related charges, however, there are no examples in Azerbaijan of the use of such instruments. Refund systems or other mechanisms to encourage recycling or the safe disposal of potentially harmful products are not utilized.

5.3 Environmental impact of pricing and subsidies

User fees, taxes and subsidies influence the behaviour of companies and households and can therefore be an instrument to attain more environmentally friendly outcomes. Prices that reveal the true cost of a good or service encourage environmental investment and the avoidance of wasteful uses.

Agriculture

The sector is a major source of employment and plays a significant role in plans for economic diversification. Because of the low level of precipitation in some parts of Azerbaijan, irrigation is important to ensure the viability of agriculture. As a result of poor infrastructure, however, water losses are substantial, accounting for 35 per cent of total water abstraction in 2008 (Chapter 7).

The State Amelioration and Water Farm Joint Stock Company, which became operational in February 2006, was established on the basis of a former agency attached to the Ministry of Agriculture. This company operates off-farm irrigation systems and water infrastructure of State significance. Water user associations started to emerge in 2000, in order to encourage more efficient use of water. Since 2006, water fees are no longer calculated on the basis of the surface under irrigation but depend on the amount of water used, currently 0.50 manat per thousand m³. Water user associations are supplied at this wholesale price and then charge different mark-ups, which reflect the various services provided to their members.

Water use fees collected by the State company play a limited role in financing the main water infrastructure, which is almost completely reliant on budgetary allocations. Fees are approved by the Tariff Council, and there are no plans to increase them.

Transport

The number of cars doubled between 2002 and 2008, considerably affecting air quality in urban areas. Emissions of pollutants to air from stationary sources peaked in 2005 and have been declining since then. By contrast, emissions from mobile sources have continued to grow, representing some 70 per cent of the total in 2008 (Chapter 6). The underdevelopment of public transport boosts potential demand for private transport. However, some actions described in the Comprehensive Action Plan for Improving the Environmental Situation for the period 2006–2010 were implemented especially for Greater Baku (licensing of obsolete vehicles, introduction of transport management system in Baku, completion and upgrading of transport infrastructure, switch from fuel to gas, and improvement of abatement techniques) (Chapter 6).

Existing providers of public transport services, such as taxis, are sometimes inadequately regulated (for example with regard to the regime of technical inspections), a shortcoming which also contributes to pollution problems. In addition to the pollution charges and the road tax presented in section 5.2, there are some additional taxes and duties that impact this sector.

Fuel prices have increased rapidly in recent years, in particular for diesel. As a result, the ratio between retail diesel and less polluting super gasoline prices increased from 0.43 in 2002 to 0.76 in 2008 (table 5.3). However, the price level of diesel in 2008 is consistent with the presence of implicit subsidies, at around 70 per cent of US prices, which can be considered as an international minimum benchmark for a non-subsidized road transport policy. By contrast, gasoline prices are comparatively higher. Excises on diesel are charged at a rate of 24 per cent or around one-fourth of those applying to other types of motor fuel.

Table 5.3: Retail fuel prices, 2002-2008

	US cents per litre			
	2002	2004	2006	2008
Diesel	16.00	18.00	41.00	56.00
Super gasoline	37.00	41.00	46.00	74.00
Ratio	0.43	0.44	0.89	0.76

Source: GTZ, 2010.

There are no car production manufacturing facilities in Azerbaijan; vehicles are mainly imported from the Russian Federation and Western Europe. The presence of old cars, coupled with poor servicing, is an important factor in air pollution. Customs tariffs differentiate somewhat between new and used vehicles. Import duty on new vehicles (less than a year) is charged at a rate of US\$ 0.4 per cm³ of engine volume, while the corresponding rate for used vehicles is US\$ 0.7. The existing differentiation between new and used cars is not strong enough to discourage the import of polluting vehicles and provide incentives for fleet renewal. However, imports of vehicles not in compliance with the Euro-2 standard will be banned as of July 2010.

In addition to customs duties, imported cars are also subject to VAT and excises. Excises taxes are determined in the Tax Code and are not differentiated according to the vehicle's age but depend only on engine volume, according to a progressive scale, whereby higher effective rates are imposed as engine volume increases.

Energy

Tariff adjustments in recent years have created better conditions for efficiency in this sector. As part of a general adjustment in charges for public services, the residential rate for electricity tripled in January 2007. Metering became universal in Baku and Sumgait, and had reached practically 100 per cent in the rest of the country by the end of 2007. Collection rates have improved, rising from around 46 per cent in 2005 to almost 53 per cent in September 2007, and have continued to increase rapidly since then. Current retail tariffs, which are equal for all types of consumers, are 0.06 manat per kW/h.

The bulk of electricity is generated from thermal sources. Oil and gas prices are set well below international levels; although this benefits electricity producers, it discourages efficiency and has an impact in terms of foregone fiscal revenues. On the basis of 2006 consumption levels, the World Bank calculated that the total implicit economic subsidy was equal to 10 per cent of GDP. On the other hand, the subsidies granted by SOCAR to other State enterprises, which were equivalent to around 4.5 per cent of GDP annually in 2005-2006, were discontinued as of 2008.

Observed energy efficiency has increased rapidly in the last years, as measured by GDP produced by unit of energy used, which rose by more than 60 per cent in the period 2003-2006 on a constant price basis. Energy use per capita declined by 11 per cent over these years (table 5.4).

There has been a very significant increase in the quality of electricity provision, as a result of heavy investment, particularly with regard to generation. Transmission and distribution losses were reduced to less than 15 per cent in 2006 from close to 20 per cent in 2003. Problems with energy supply in some areas of the country had been identified as a factor in deforestation and soil erosion, as a result of unregulated wood harvesting for household fuel. Progress in gasification in rural areas has contributed to reduce this problem.

SPPRS II envisages construction of new thermal and hydro plants, retrofitting of existing units and alternative investment in other sources of power. There are also plans to restructure the State Joint Stock Company (JSC) Azerigas to reduce losses and increase efficiency in the distribution and consumption of gas. Further progress in metrification is planned.

Table 5.4: Energy efficiency indicators, 2003-2006

	2003	2004	2005	2006
Energy use (kg of oil equivalent per capita)	1,497.20	1,563.40	1,652.70	1,659.00
GDP per unit of energy use (constant 2005 PPP US\$ per kg of oil equivalent)	2.20	2.30	2.72	3.61
GDP per unit of energy use (PPP US\$ per kg of oil equivalent)	2.07	2.23	2.72	3.72

Source: World Bank Development Indicators, online access.

Note: Purchasing Power Parity (PPP).

The State Programme for the Use of Alternative and Renewable Energy Sources contemplates State purchase guarantees for these producers. Current tariffs for electricity from wind power are 0.045 manat per kW/h, as compared with 0.041 manat for energy produced by the State JSC Azerenerji thermal operations.

SPPRSD II mentions the future development of an action plan to reduce emissions of greenhouse gases. This would include the creation of a carbon fund to provide financial assistance to help manufacturing companies reduce emissions.

Azerbaijan is actively exploring the financing opportunities created by the Clean Development Mechanism (CDM), although there are no registered projects as yet (Chapter 4). In 2009, Azerenerji signed an Emission Reduction Purchase Agreement to sell carbon credits generated by the rehabilitation of the AzDres thermal power plant, which has been financed by the European Bank for Reconstruction and Development (EBRD). The project, which is expected to reduce CO₂ emissions by three million tons annually, has involved the development of a pioneering CDM methodology for power plant rehabilitation projects with the support of EBRD.

Other utilities

Access to improved water resources remains limited in many parts of the country. Whereas in Baku the corresponding figure is some 90 per cent, only

11 per cent to 33 per cent of rural residents rely on piped water, according to the World Bank. Wastewater facilities are also poor, including in the capital, Baku. While almost 80 per cent of the residents enjoy sewerage network coverage, only about half of wastewater is treated due to insufficient facilities. In other urban areas, only around one-third of the population has coverage. In 2004, a State JSC Company, Azersu, was set up on the basis of the existing water concern covering Baku and the Absheron peninsula. This corporation, which has responsibility for both water supply and sanitation across the country, was created to address existing shortcomings and implement large-scale plans to revamp infrastructure.

Significant tariff increases took place in January 2007, as the residential water tariff for households was doubled from 0.09 manat to 0.18 manat per m³. This tariff applies to the main urban centres and the Absheron peninsula, while other households are charged at 0.14 manat per m³. There is no territorial differentiation for other users, who are charged at a higher rate of 0.70 manat per m³. This level is above an estimated operating cost of 0.12 manat. For wastewater, residential tariffs are 0.04 manat per m³ against 0.2 manat for other users. There have been no changes in water tariffs since 2007, although Azersu requested the Tariff Council to increase them at the end of 2009, in view of rising maintenance costs.

Metering covered only around one-third of the population in 2007 (up from six per cent in 2005) but there has been rapid progress in the largest urban



Local market, Baku

centres, Baku and Sumgait, since then, where full coverage is expected by the end of 2010. The situation is different in the regions, where metrification is running in parallel with the revamping of the water supply and sanitation infrastructure.

Collection rates of water tariffs have been problematic, reaching some 60 per cent in 2007. Although there has been some progress since then, with almost practical full collection from public and commercial organizations, collection rates are still around 50 per cent for households. This reflects weak mechanisms for legal enforcement but also problems with metering and waste, which make it more difficult to charge effectively for water use. Unaccounted water stood at around one-quarter of total water abstracted in 2007, of which around half can be explained by leakages in pipes within buildings. SPPRSD-II envisages reaching a 100 per cent consumer fee collection for water provision, which will be facilitated through the establishment of a system for electronic bill payment through post offices and banks.

In comparison with the electricity sector, reforms (including metering) have been slower, with negative implications for the financial capacity of State-owned Azersu and investment. As Azersu does not generate sufficient resources, Government and donor financing is necessary.

There are plans to attract investment from the private sector to rehabilitate water and sewerage systems. Private sector participation could help increase resource efficiency and raise financing. This would require an appropriate regulatory framework, in particular regarding tariff setting, full metering coverage and much improved collection rates. To date, there is no concession law that would facilitate public-private partnerships in infrastructure financing.

In the area of municipal waste, some legal changes have widened the role of economic incentives. However, large public investments to address existing deficiencies have dominated developments in the sector. One of the components of the Integrated Solid Waste Management Project, which was initiated in 2009 in collaboration with the World Bank, envisages tariffs reforms. Current fees are low (0.14 manat per person per month). Higher fees and improvements in revenues collection will be required to ensure the financial sustainability of the infrastructure and equipment that is being put in place.

The absence of well-developed sorting mechanisms limits economic uses of waste and private sector

involvement. However, some progress has been made in this area, in particular following the creation in 2008 of the State Joint Stock Company Tamiz Shahar (Clean City), which depends on the Ministry of Economic Development, to deal with the management and disposal of household solid waste in the city of Baku. The construction of the Balakhany processing plant to transform waste into electricity was initiated in 2009, on the basis of a Design, Build and Operate contract with the French company CNIM⁴ (Chapter 8).

Resolution No. 185 of the Cabinet of Ministers dated 12 May 2008 on the Approval of the Rules for the Determination of Fees for Collection, Placement, Use and Disposal of Wastes establishes basic principles for setting fees in relation to waste. If the waste generated is above limits determined on the basis of the use of raw materials, rates will be five times higher. If waste is placed in especially built landfills, no fees will be charged; in the case of toxic waste, however, insurance will be required. Fees for solid municipal waste will be determined on the basis of those charged for non-toxic waste to industrial users. If waste is used for recycling, it is exempted from the payment of fees. The legislation also envisages that fees could be offset against environmental protection measures carried out by the polluter.

5.4 Main trends in environmental spending

Environmental expenditures include outlays by Government agencies, the domestic private sector, foreign companies and donor organizations. The State Statistical Committee routinely publishes figures covering major trends on environmental spending. Data are compiled only according to the abater principle, i.e. on the basis on who carries out the activity, with independent sources of financing. According to OECD, the Classification of Environment Protection Activities (CEPA) standard definition of environmental domains is only partially followed. Nuclear safety issues, noise and vibration and R&D are excluded.

The State Programme on Improvement of the Official Statistics for the period 2008–2012, which was approved by Presidential Decree No. 2583 of 26 December 2007, envisages a closer alignment of environmental investment data with international standards, including an improved classification system, in 2011. According to the programme of work of the State Statistical Committee for 2011, data will also be collected and prepared on the basis of the financing

⁴ Constructions Industrielles de la Méditerranée

Table 5.5: Environmental expenditures, 2003–2008

	2003	2004	2005	2006	2007	2008
Total, million manat	20.70	28.06	30.91	42.58	104.23	175.60
Total, million US\$	21.08	28.56	32.69	47.66	121.46	213.73
Total as percentage of GDP	0.29	0.329	0.247	0.227	0.368	0.438
Breakdown in percentages						
Current	73.4	75.2	69.2	61.1	34.5	35
Capital repair of fixed assets	8.4	6.4	6	4.2	2.9	3.1
Maintenance of reserves, national parks, wild animals and fishes	2.1	1.4	3.3	3.6	2.4	1.6
Forestry	1.8	10.1	12	10.2	7	4.5
Capital investments	14.3	6.8	9.4	20.9	53.3	55.7

Source: State Statistical Committee, 2010.

principle, thus providing information on who pays for the environmental measures implemented.

Since 2005, new questions have been included in the questionnaire used to obtain information from enterprises, which provide more details on environmental expenditures related to waste. All types of enterprises are covered by this statistical survey, including small and medium-sized firms. By contrast, data on households' environmental expenditures is not collected.

Environmental expenditures almost doubled in 2003–2006 in dollar terms (table 5.5). However, GDP almost tripled over this period, driven by the fast expansion of the hydrocarbons sector. Consequently, their share of GDP declined. The growth of environmental spending accelerated further in 2007–2008. As a result of this rapid increase, the nominal amount in dollar terms in 2008 was almost ten times the level reached in 2003, equivalent to 0.44 per cent of GDP. The increase of this ratio over this period was more than 50 per cent.

In 2003–2006, current expenditures dominated, accounting for an average 70 per cent of the total.

However, a significant change took place in 2007–2008, when there was a very large increase in environmental investments, in particular on water and land protection. The rapid growth of investment drove the overall increase in environmental spending as a percentage of GDP. As a result of this strong investment effort, environmental investment accounted for some 55 per cent of environmental spending in this period (table 5.6).

5.5 Public spending

Public spending has played a major role in the overall growth of environmental spending in recent years, as the public sector has been driving the massive increase in investment observed. Spending is carried out by a variety of public agencies, in addition to the Ministry of Ecology and Natural Resources. Public enterprises are asked to perform environmental tasks in State programmes, turning them into instruments of environmental policy. Thus, Azerenerji, Azerigaz or Azersu are quoted together with ministries and Government agencies as being responsible for the implementation of concrete actions in different programmes, albeit without specific individualization

Table 5.6: Capital investments for rational use of natural resources and protection of environment, 2003–2008

	2003	2004	2005	2006	2007	2008
Total, million manat	2.97	1.91	2.91	8.88	55.51	97.89
Total, million US\$	3.05	1.95	2.96	9.39	62.13	114.07
Total, as percentage of GDP	0.049	0.027	0.034	0.071	0.296	0.345
Sector breakdown, in percentages						
Water	65.8	89.3	45.0	77.0	33.8	80.5
Air	29.6	10.7	51.6	18.0	2.0	0.9
Land	4.6	..	3.4	4.9	64.2	18.5

Source: State Statistical Committee, 2010.

Table 5.7: Budget-funded environmental spending by Ministry of Ecology and Natural Resources, excluding investment, 2003-2009

	2003	2004	2005	2006	2007	2008	2009
Total, million manat	8.110	10.313	12.818	16.003	20.561	27.264	32.285
Breakdown, percentage							
Hydrometereological service	20.2	19.5	19.5	15.9	20.0	19.2	18.5
Water resources	2.7	2.6	3.0	5.4	6.6	5.5	5.7
Biodiversity	6.1	6.1	6.5	6.8	7.9	8.2	8.6
Forest protection and restoration	24.5	28.6	30.1	34.9	36.4	31.9	28.2
Geological exploration	31.8	26.8	23.0	20.8	12.9	19.8	17.8
Landscape	0.0	0.0	0.0	0.0	0.0	0.0	5.1
Ecological safety	14.7	16.3	17.9	16.2	16.3	15.4	16.1

Source: Ministry of Ecology and Natural Resources, 2010.

Table 5.8: Investment expenditure of the Ministry of Ecology and Natural Resources, 2003–2009

	2003	2004	2005	2006	2007	2008	2009
Presidential Reserve Fund							
Committed	..	..	..	0.300	14.500	8.750	15.000
Actual	..	..	..	0.200	14.500	6.324	8.737
State Investment Programme	0.342	0.470	1.056	1.082	5.260	20.927	5.195

Source: Ministry of Ecology and Natural Resources, 2010.

of measures. The State Oil Company of the Republic Azerbaijan (SOCAR), an organization that is of a commercial nature but fully State-owned, finances and carries out investments with environmental significance which are often outlined in State plans. Public demand for environmental services has encouraged provision by private companies.

Azerbaijan's State budget provides an expenditure breakdown according to the various functions of the Government, including environmental protection. The quality of the coverage of this functional presentation has increased but the data included concerns only current expenditure. Investment is treated separately, without consideration to this functional classification. In addition, budget figures underestimate public financial commitments to environmentally-related issues, because they do not cover the role played by organizations that are under State control but not included in the budget, such as SOCAR. In addition, the narrow functional definition of environmental protection excludes activities related to agriculture, forestry, fishing and hunting or housing and communal services which may have also an environmental dimension that is not easy to isolate.

Environmental spending by the Ministry of Ecology and Natural Resources (including the budgetary funds under its control but excluding investment) reached

32.3 million manat in 2009 (Table 5.7). This represents a fourfold expansion in nominal terms; however, as a share of GDP, it is equal to the 0.09 per cent observed on average in the period 2003–2009. The composition of spending has remained rather stable, being dominated by forest protection and rehabilitation. The only clear declining trend concerns geological exploration, which has been steadily falling in importance, from 32 per cent of the total in 2003 to 18 per cent in 2009.

Investment expenditures allocated through the State Investment Programme to MENR increased sharply in 2007–2008 (Table 5.8). In 2008, such investments reached 21 million manat or around 20 per cent of total environmental capital spending in the country. Water protection (48 per cent) and waste (40 per cent) accounted for the bulk of these investments.

Overall amounts allocated to the State Investment Programme are approved as part of the annual budgetary process. The financing of specific measures within this overall limit, including those requested by MENR, is subject to a subsequent decision-making process, under the guidance of the Ministry of Economy, which plays a coordinating role, and with input from the Ministry of Finance, on the basis of the requests submitted by other Ministries. It is finally endorsed by the Cabinet of Ministers.

Table 5.9: State Oil Fund of Azerbaijan, 2004–2009

	million manat					
	2004	2005	2006	2007	2008	2009
Revenues	322.8	660.5	985.9	1,872.3	11,864.7	8,176.7
Expenditures	163.5	233.0	981.3	1,061.2	4,291.8	5,294.5
of which						
Transfers to state budget	130.0	150.0	585.0	585.0	3,800.0	4,915.0
Construction of water pipeline from the Oguz-Gabala region to Baku	..	..	82.7	132.9	211.8	130.0
Financing of the Samur-Absheron irrigation reconstruction project	..	..	37.0	76.9	120.6	120.0
Assets accumulated	915.2	845.2	1,280.5	2,100.1	9,010.1	11,966.5
-as percentage of GDP	10.7	6.7	6.8	7.4	22.4	34.7

Source: SOFAZ, 2010.

In addition to these outlays, the Presidential Reserve Fund has financed large environmental investments under the control of the Ministry of Ecology and Natural Resources in recent years. The Fund, which is constituted within the annual State budget with a value not exceeding two per cent of total projected expenditures, can be used on a discretionary basis following requests for financing by interested Ministries. Including amounts disbursed from this Fund, overall investment expenditure by the Ministry amounted to 28 per cent of total environmental capital spending in the country in 2008.

Other ministries and agencies, in particular the Ministry of Economic Development, have also made considerable investments with environmental significance, in particular regarding water and waste infrastructures. The State Oil Fund of Azerbaijan (Box 5.1) has financed directly a number of environmentally relevant activities, including the construction of the water pipeline from the Oguz-Gabala Region to Baku and the Samur-Absheron irrigation reconstruction project (table 5.9).

Assessment

Changes in public environmental spending should be seen against the backdrop of greatly improved public finances as a result of the development of hydrocarbon wealth. Increased spending capacities have created an opportunity to quickly address environmental and infrastructure shortcomings.

Environmental objectives, such as raising the efficiency of the utilities sector or improving water supply and sanitation, are consistent with broader economic plans, which seek the development of the non-oil economy through the revamping of infrastructure, thus creating

job opportunities and better conditions for economic activity, in particular in the regions.

While the overall assessment regarding environmental expenditure is positive, given the increased investment effort that has been deployed in recent years, there are a number of planning-related aspects where further progress would create a more solid foundation for public spending.

Demands for financing from the State Investment Programme (SIP) include the overall cost of the measures proposed, for the current year and the next three years, with an indication of other possible sources of financing. However, when it submits requests for financing, the Ministry of Ecology and Natural Resources does not have previous guidance on the ceilings that may constrain its request, including over the medium term. Such information would facilitate planning. This also applies to requests for financing from other Ministries which also incur environmental expenditures. The Presidential Reserve Fund has played an important role in financing investments, but availability of funds is not known beforehand. Significant investments with environmental significance are financed by SOFAZ and also by SOCAR.

Requests for financing for inclusion in the State Investment Programme are based on the consistency of the proposed actions with the measures envisaged in various State programmes, including those with a broader development orientation. However, there is no integrated State policy planning document that sets out a consistent and authoritative framework for defining spending priorities and arbitrating any possible conflicts. Although specific time horizons are mentioned for key actions, there is no general financial

envelope to provide a more solid foundation for these requests.

Although there has been a strong public investment effort regarding the environment in recent years, there is less clarity with regard to financial commitments over the medium term, which complicates planning efforts by the agencies involved. While the current framework makes it possible to ensure the broad consistency of environmental actions with existing programmes, it does not yet provide a clear basis for multi-year programming, as financing arrangements are not sufficiently stable.

Proposals for financing are not routinely backed by an explicit consideration of the costs and benefits of alternative actions. While environmental measures often do not yield direct monetary benefits, it is still possible to assess their impact. This includes not only checking their inclusion on existing programmes and financial propriety, as is regularly done, but also evaluating the effects, before and after their implementation. This would require further advances in introducing an effective system for the appraisal of public investment projects. Improved disclosure of the public investment programme would enhance the effectiveness of public spending

5.6 Environmental Funds

There are a number of funds that are under MENR control. However, these are all budgetary funds, which are integrated into the overall State budget system. Collected revenues are part of the single Treasury account and released only at the approval of the Ministry of Finance on the basis of overall spending plans. As the Ministry of Finance also needs to endorse future revenues projections, it exerts a significant degree of influence over these funds.

The two largest funds are the State Fund for the Protection of the Environment and the State Fund for the Preservation and Rehabilitation of Forests (table 5.10). Art. 28 of the Law on Environmental Protection specifies the types of measures that can be financed by the State Fund for the Protection of the Environment, which include research, education, infrastructure building and provision of incentives. Altogether, environmental funds' share of environmental expenditure by MENR (excluding investment) has remained quite stable in the period 2003–2009, representing just above four per cent of the total.

Pollution charges and fines are the main sources of revenue for the State Fund for the Protection of

the Environment. Revenues from hunting licenses declined sharply in 2005 after the prohibition of bird hunting. The resources raised by forest units through penalties, sales of wood from sanitary cuttings or rents can be complemented by other means allocated by the central organs of MENR, which monitors the Fund's functioning and approves specific spending measures. These need to be prepared in accordance with the methodological guidance provided by central bodies.

In order to promote the development of protected areas, the so-called Special Funds of Relevant Agencies Established for the Management and Protection of Particularly Protected Natural Sites (State Fund on Protected Areas) were set up in 2008. In this case, while protected areas still need to submit their spending plans for central approval, they enjoy a greater degree of financial autonomy and their resources are not complemented by additional allocations.

5.7 Foreign direct investment and donor financing

The development of hydrocarbon wealth has attracted large foreign direct investment (FDI) inflows. These have had a positive impact on the environmental performance of this sector, as investors have brought better environmental practices and technical expertise. In recent years, however, some repatriation of these foreign investments has been seen. Net FDI, as recorded in the balance of payments, reached some 30 per cent of GDP annually in 2003–2004 but became negative in 2006, with net outflows averaging 7.7 per cent of GDP in 2006–2008. On a gross basis, without taking into account the financial impact of the repatriation of investments, gross inflows totalled around 14 per cent of GDP in 2006–2008.

Participation in international conventions has facilitated access to external financing. The Global Environment Facility (GEF) has supported various projects in the areas of biodiversity, Persistent Organic Pollutants (POPs) and climate change. Via a US\$ 2.2 million grant, GEF is supporting a project on environmentally sound management and disposal of polychlorinated biphenyls (PCBs) to facilitate compliance with the Stockholm Convention on Persistent Organic Pollutants, with a total value of US\$ 7.5 million, to be completed by 2012. The second communication to the United Nations Framework Convention on Climate Change, which is undergoing a consultation process, was also prepared with GEF backing.

Table 5.10: Environmental funds, 2003–2009

Millions manat

	2003	2004	2005	2006	2007	2008	2009
State Fund on Protection Environment							
Revenues	0.22	0.57	0.34	0.42	0.46	1.03	0.95
Expenditures	0.21	0.20	0.24	0.36	0.46	0.48	0.53
State Fund for the Preservation and Rehabilitation of Forests							
Revenues	0.25	0.26	0.51	0.55	0.71	0.58	0.70
Expenditures	0.19	0.22	0.25	0.27	0.54	0.70	0.74
State Fund on Protected Areas							
Revenues	..	..	..	..	..	0.10	0.13
Expenditures	..	..	..	..	..	0.03	0.04

Source: Ministry of Ecology and Natural Resources, 2010.

Table 5.11: Official assistance, environment as policy objective, gross disbursements, 2003–2009

US\$ Millions

	2003	2004	2005	2006	2007	2008	2009
Total	8.382	14.591	17.158	24.438	22.964	18.727	..
DAC countries	0.153	0.113	0.931	11.423	8.682	6.781	..
Multilateral	8.229	14.478	16.227	13.015	14.282	11.945	..

Source: OECD. Statistics, data extracted on 12 May 2010.

External support in areas with an environmental impact has taken place mainly in water supply and sanitation, irrigation and waste. Official assistance, which includes lending, rose by 65 per cent in 2006–2008 on average in relation to the three preceding years, representing around 0.1 per cent of GDP (table 5.11). Government strategic plans such as the State Programme for Poverty Reduction and Sustainable Development for the period 2008–2015 envisage further external financing, from both bilateral and multilateral sources, to revamp the water supply and sanitation infrastructure and achieve the MDGs. The first US\$ 75 million tranche loan of a US\$ 600 million Water Supply and Sanitation Investment Programme granted by the Asian Development Bank was signed in December 2009. In addition, the World Bank is supporting the Second National Water Supply and Sanitation Project with a US\$ 230 million loan approved in 2008.

EBRD has been active in projects seeking to generate carbon credits in the energy sector (see section 5.3) but its major loan in the non-oil sector is the € 120 million facility granted to the Garadagh cement company in 2009, which will result in the introduction of new technology reducing energy consumption and carbon emissions.

Public finances are very strong as a result of rapid economic growth and the exploitation of Azerbaijan's oil and gas resources. Therefore, the significance of external assistance lies in knowledge transfer rather than alleviation of non-existent financial constraints. The involvement of development partners, including multilateral financial institutions, supports the improvement of project management practices and facilitates access to relevant expertise.

5.8 Conclusions and recommendations

Progress has taken place in the areas under review in the period since the first EPR. Tariffs have become more cost-reflective and collection rates have increased. The economy is more resource-efficient and incentives for better environmental management have improved. However, the system of pollution charges remains unreformed and largely ineffective as a policy instrument. Environmental spending has increased significantly in recent years, with expansion driven by investment.

The system of pollution charges has not been changed since the last EPR, so the shortcomings pointed out there regarding lack of focus and limited influence in changing the behaviour of polluters remain valid.

As rates have not been updated, the dissuasive value of the charges has been further eroded by inflation. System reform should be guided by a desire to achieve specific environmental targets, including in combination with the use of other policy instruments. Notwithstanding, some progress has been noted with regard to compliance.

Recommendation 5.1:

The Ministry of Ecology and Natural Resources, in cooperation with the Ministry of Economic Development and the Ministry of Finance, should make proposals for approval to the Cabinet of Minister to revise the system of pollution charges, targeting a reduced number of substances, substantially increasing rates and creating clear mechanisms for periodical rate revision.

Increased affluence has resulted in an expansion of car ownership. As a result, and following a decision to close down certain of the most polluting installations in Baku and replace their capacity with newly-built ones located in lower populated areas, emissions from mobile sources have become the main source of air pollution in urban areas. Regulatory means, such as projected import restrictions, can raise environmental standards. However, this could be complemented by economic incentives and further public investments.

Recommendation 5.2:

The Ministry of Economic Development, in cooperation with the Ministry of Finance, the State Customs Committee, the Ministry of Taxes and the Ministry of Ecology and Natural Resources, should explore the possibility of:

- (a) *Introducing further differentiation in the customs tariff against the import of old cars;*
- (b) *Creating positive inducements for the renewal of the car fleet, including through advantages in car-related taxes;*
- (c) *Developing further public transport alternatives in major urban centres.*

There has been progress overall in charging users for the effective utilization of resources, including through advances with regard to metrification and tariff changes. However, collection rates in utilities are still unsatisfactory and there is no independent tariff-setting process, which does not facilitate private sector involvement.

Recommendation 5.3:

The Tariff Council within the Ministry of Economic Development together with other tariff-setting authorities should support further progress towards

tariffs levels and collection rates that ensure full cost recovery in utilities while addressing social concerns through targeted support to vulnerable groups.

Rapid economic growth and the strengthening of public finance as a result of the development of the hydrocarbon sector have created new opportunities for financing public projects, including in the environmental domain. The massive investment effort is rapidly improving the environmental situation. However, while financing has been available, there is insufficient clarity as to concrete commitments over the medium-term. Strong public investment has been an appropriate and expedient way of quickly addressing existing shortcomings. As this effort is under way, increased attention should be paid to the efficiency of public spending and the involvement of the private sector, so to focus public sector intervention where it is most needed.

Recommendation 5.4:

The Ministry of Finance and the Ministry of Economic Development, in cooperation with the Ministry of Ecology and Natural Resources, should:

- (a) *Prepare medium-term financial envelopes for environmental programmes, including investment components, projected public commitments and expectations of financing from other sources;*
- (b) *Develop and apply cost-benefit methodologies that provide clear foundations for environmental spending and justify public sector involvement;*
- (c) *Facilitate the dissemination of information on future spending plans, so to use public opinion as an input in efficient decisions and alert the private sector to possible commercial opportunities.*

* * * * *

Those following parts of recommendations from the first EPR of Azerbaijan that are still valid and their preceding conclusions are listed below.

Azerbaijan has faced severe public sector budget constraints throughout the decade. These have resulted from, among other things, the fall in national income compared to the pre-transition period. This has reduced the availability of public finance for all socially important purposes, including the environment. Inadequate governmental funding, which remains the key source of finance for environmental protection, is a major obstacle for the attainment of environmental policy objectives.

Preparation of the budget of the Ministry of Ecology and Natural Resources is implemented with the participation of relevant departments and other bodies. Over the last two years, the Ministry has succeeded in increasing the funds by 150 percent, and these expenditures have been primarily targeted to strengthening and renewing technical capacities. The process is open and transparent, but funds are inadequate and could be used with greater efficiency, transparency and accountability.

EPR I -Recommendation 2.1:

The Ministry of Ecology and Natural Resources should improve the management of the State Environmental Protection Fund by addressing its accountability, transparency, cost-effectiveness and environmental effectiveness. The creation of an advisory board for the Fund with the participation of all interested parties, including the environmental NGO community, should be considered

While private and corporate resources (including the banking, finance and investment sectors) represent a valuable potential source of financing, their capacity is still used insufficiently. There is a need to harness commercial and foreign sources of financing for environmental investments. At present, however, there are cases where environmental requirements have been weakened in sales contracts for foreign investments. It is essential that the Ministry of Ecology and Natural Resources be involved in decision-making in the privatization process.

EPR I -Recommendation 2.2:

(a) The Ministry of Ecology and Natural Resources jointly with the Ministries of Economic Development, of Taxes and of Finance should:

- *Develop incentives for the public sector to effectively leverage private and foreign finance for the environment; and*

- *Build the capacity of the executive powers and municipalities to prepare environmental projects that can be co-financed on commercial terms.*

(b) The Ministry of Ecology and Natural Resources should be involved in the decision-making in the privatization process to promote environmental investments by the new enterprise owners.

Azerbaijan has introduced a wide range of environmental charges and other environment-related economic instruments. They are not, however, promoting changes in behaviour of businesses to prevent or reduce environmental pollution. The generally low rates, the failure to enforce the legislation and frequently inefficient collection are all factors that have weakened the efficiency and environmental impact of the system.

The aggregated revenue-raising capacity of pollution charges and other environmental economic instruments is too small to create a critical mass of resources to support significant environmental improvements. The revenue from these instruments represents only some 0.02% of the revenue from all types of charges and taxes in the country. Consequently, Azerbaijan needs to revise its policy of using economic instruments for environmental protection and the management of natural resources.

EPR I -Recommendation 2.5:

The Ministry of Ecology and Natural Resources should initiate a reform of environmental charges, fees, fines and compensation. This should involve, in particular, raising relevant rates to a level that would provide incentives to prevent or reduce pollution and the misuse of natural resources, and increase revenue substantively.

***PART III: INTEGRATION OF ENVIRONMENTAL
CONCERNS INTO ECONOMIC SECTORS AND
PROMOTION OF SUSTAINABLE DEVELOPMENT***

Chapter 6

AIR MANAGEMENT AND PERMIT ISSUING

Introduction

During the previous decade, Azerbaijan's environmental policy focused on remediation of environmental burdens from the past, e.g. clean-up of contaminated soil, and on waste and water management. Consequently, air quality was not a priority for Azerbaijan, which is why the number of measures and international projects on air quality was limited. As a result, none of eight protocols to the United Nations Economic Commission for Europe (UNECE) Convention on Long-range Transboundary Air Pollution (CLRTAP) has been ratified to date. However, this situation changed recently. In the case of stationary sources, it has been decided to close down certain of the most polluting installations in Baku and replace their capacity with newly-built ones located in lower populated areas. In the case of emissions from mobile sources, major measures were prepared and are being implemented, especially as regards improvement of transport infrastructure, management of transport in the Baku City or more efficient vehicle inspection measures. The air quality assessment and management system is being developed and implemented separately from mitigation of climate change (reduction of GHG emissions), which means that potential synergies cannot be exploited.

The environmental pollution prevention and control system is still not fully developed. The number of permit issuing procedures is limited, and modern concepts like integrated pollution prevention and control (IPPC) or introduction of best available techniques (BATs) are not in place. However,

important measures have been taken with regard to water management, waste management and soil clean-up, and positive developments can be expected in these areas.

6.1 Air

Description of the current situation

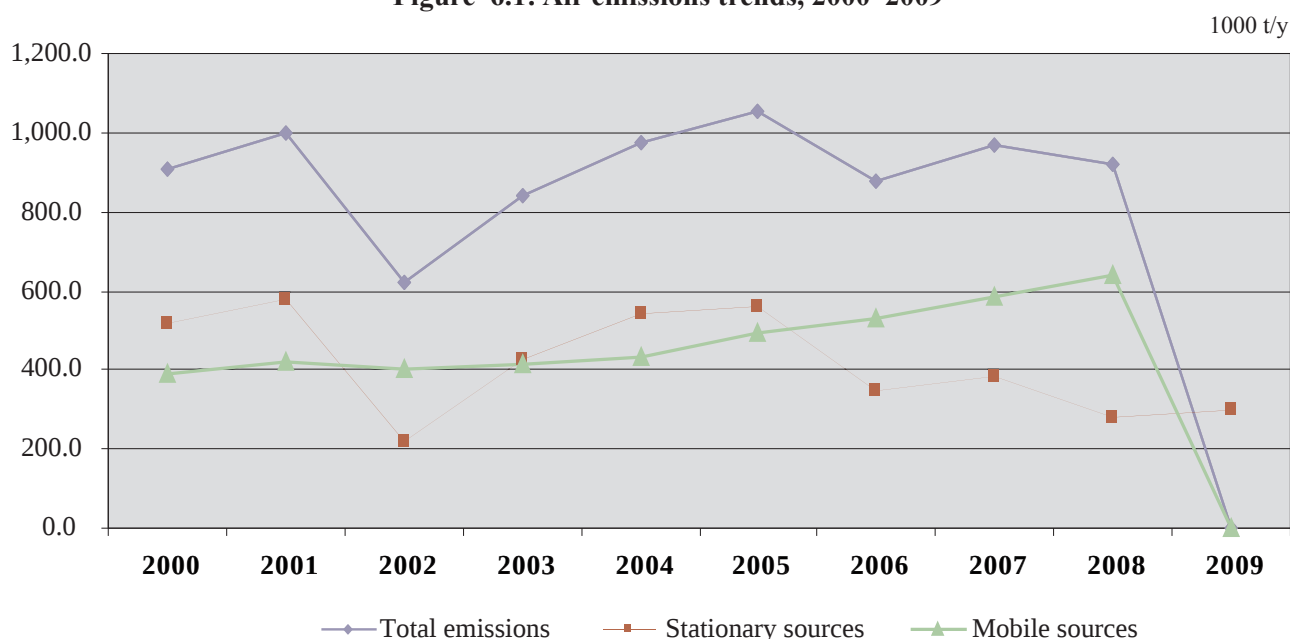
The inventory system of emissions in Azerbaijan is based on annual emission reports, which are to be submitted by the operators of emission sources (more than 12,000 sources registered) and on the estimates of emissions from mobile sources, based on fuel consumption. Emissions from households are not included. Emission projections based on advanced modeling techniques are not being developed for air pollutants.

Between 2003 and 2009, a declining trend for emissions from stationary sources can be observed (table 6.1 and figure 6.1), whereas emissions from mobile sources increased from almost 400 kt per year to more than 640 kt per year in 2008 (i.e. by almost 64 per cent), which can easily be explained by the development of the vehicle fleet. In fact, the increase in emissions from mobile sources has been so rapid that in 2008, they were twice as high as those from stationary sources. At an aggregate level, however, because of these opposing trends, there is no significant tendency over time in total emissions, although significant year-by-year fluctuations occur. When emissions are compared with the values of gross domestic product (GDP), relative decoupling can be seen in the case of

Table 6.1: Total emissions of pollutants into the air for the period 2000–2009

	1,000 ton/year									
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total emissions	908.1	1,000.0	620.7	837.9	975.3	1,054.3	875.1	969.9	922.7	..
Stationary sources	515.4	577.0	217.4	425.9	539.8	557.9	344.2	385.9	280.7	300.0
Percentage in total	57	58	35	51	55	53	39	40	30	..
Mobile sources	392.7	423.0	403.2	412.0	435.5	496.4	530.9	584.0	642.0	..
Percentage in total	43	42	65	49	45	47	61	60	70	..
GDP per capita (US\$)	665	714	774	897	1,060	1,600	2,509	3,906	5,404	4,874

Source: State Statistical Committee, Statistical Yearbook 2002, 2008, Environment in Azerbaijan 2009.

Figure 6.1: Air emissions trends, 2000–2009

Source: State Statistical Committee, Statistical Yearbook 2002, 2008, Environment in Azerbaijan 2009.

total emissions and absolute decoupling in the case of emissions from stationary sources.

The total number of vehicles has increased by 110 per cent and the number of cars has increased by almost 129 per cent. Notwithstanding the increasing number of new vehicles, the age structure of the vehicle fleet is not satisfactory and many obsolete highly polluting cars and lorries are still in operation (in 2008, 64 per cent of vehicles were registered before 2005 and 65 per cent were mostly older than 18 years). In 2008, 70.3 per cent of emissions into the air from mobile sources were registered in Baku and 6.4 per cent in Ganja. Road infrastructure is not fully sufficient to cope with the rapid increase in vehicles.

Taking into account the population of 8.73 million (2009 estimate), the population/car ratio is 11.5. Should the recent fast economic development continue in coming years, this value would decrease rapidly and

the amount of emissions from mobile sources would increase, especially in Baku and other big cities.

As for stationary sources, emissions of dust, nitrogen oxides and carbon monoxide do not show a clear trend, whereas emissions of sulphur dioxide and of others exhibit a declining trend (table 6.3).

The decrease in sulphur dioxide emissions can be explained by the switch from fuel oil to gas, which has been introduced in many energy and industrial installations, while the decrease in emissions of others is related to improved techniques applied in the gas and oil mining and treatment sector. In the case of nitrogen oxides and carbon monoxide, the decrease in emissions from stationary sources is offset by the increase in emissions from mobile sources. Due to the specific structure of the Azerbaijan industry, which is characterized by a strong position of the extractive industry, total emissions of “other pollutant”

Table 6.2: Development of vehicle fleet, 2000–2009

	1,000 vehicles									
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total	440.6	451.6	457.4	511.5	554.0	612.1	690.0	773.3	860.0	925.9
Lorries	78.6	77.1	76.9	79.0	80.9	90.9	97.4	110.4	113.1	117.4
Buses	16.8	17.3	17.4	18.8	21.0	26.7	27.5	28.1	29.3	29.9
Cars	332.0	343.0	350.6	400.4	439.1	479.4	549.0	616.9	700.1	759.2
Motorcycles	2.8	4.8	4.6	4.9	5.2	5.5	5.9	6.5	6.1	..
Others	10.4	9.4	7.9	8.2	7.8	9.6	10.2	11.4	11.4	..

Source: State Statistical Committee, Statistical Yearbook 2002, 2008, Environment in Azerbaijan 2009.

(hydrocarbons and volatile organic compounds) are much higher than those of individually listed main pollutants.

In 2008, 12,374 individual stationary emission sources were registered. The bulk of emissions from stationary sources can be traced to the extractive industry (54.7 per cent in 2008), the manufacturing

industry (22.7 per cent in 2008), and the energy sector (14.1 per cent in 2008). Emissions from the energy sector derive from the combustion of residual oil and natural gas. Recently, a transition from oil to gas has been under way in many energy and industrial installations. Many stationary sources are equipped with emission abatement facilities (table 6.4).

Table 6.3: Emissions of individually listed pollutants from stationary sources, 2000–2009

	1,000 ton/year									
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Dust	19.2	28.3	29.4	34.1	43.5	28.2	23.7	28.4	31.3	19.8
SO ₂	35.1	14.7	13.6	15.5	13.2	13.8	12.4	9.2	8.0	4.3
NO _x	24.2	27.1	26.3	24.2	25.2	25.8	29.3	23.1	36.3	24.2
CO	26.3	27.9	18.2	25.4	42.5	26.1	16.0	25.3	37.4	27.6
Others	410.6	479.1	129.9	326.7	415.4	464.0	262.8	299.9	181.8	224.1

Source: State Statistical Committee, Statistical Yearbook 2002, 2008, Environment in Azerbaijan 2009.

Note: Item *others* includes hydrocarbons, volatile organic components, ammonium and other pollutants.

Table 6.4: Rate of abated emissions, 2000–2009

	1,000 ton/year								
	2000	2002	2003	2004	2005	2006	2007	2008	2009
Pollutants generated	627.0	459.0	713.0	829.0	1,781.0	715.0	765.0	646.0	..
Pollutants emitted	515.4	217.4	425.9	539.8	557.9	344.2	385.9	280.7	300.0
Percentage abated	16.0	53.0	40.0	35.0	69.0	52.0	50.0	57.0	..

Source: State Statistical Committee, Statistical Yearbook 2002, 2008, Environment in Azerbaijan 2009.

Around three-quarters of total emissions from stationary sources are registered in Baku. In all, the four major cities (Baku, Mingachevir, Sirvan and Sumgayit) account for 70 to 95 per cent of total emissions from stationary sources.

Air quality data are monitored and collected by the National Department of Environmental Monitoring within the Ministry of Ecology and Natural Resources (MENR) and by the sanitary and epidemiology centres of the Ministry of Health (see Chapter 3). Monitoring data are analyzed and put in a database, and the information is distributed among other interested ministries and institutes. Furthermore, data are published annually in the Statistical Yearbook as well as in the specialized yearbook “Environment in Azerbaijan”.

Currently, the air monitoring system comprises 26 manual monitoring stations measuring up to 17 pollutants. All stations measure dust, sulphur dioxide, nitrogen dioxide and carbon monoxide;

some of them also measure other pollutants (e.g. formaldehyde, ammonium, chlorine, furfural or mercury). Samples are taken three times daily and analyzed, on the basis of which average daily concentrations are calculated. In addition, maximum concentrations are registered. Only total suspended particulates (TSP), which include coarse particulates having no significant impact on human health, are measured. No data are available for fine particles or particulate matter (PM) (PM₁₀ and PM_{2.5}). Ground-level ozone is not measured at all, and heavy metals in the air are only occasionally measured. Out of the 26 manual monitoring stations located in 8 cities, 8 stations are located in Baku, 5 in Ganja, 4 in Mingachevir and 3 in Sumgayit. (Chapter 3)

Data for 2003–2009 show that the levels of certain pollutants in some cities exceed air quality standards known as maximum allowable concentrations, or MACs. The highest average daily concentrations of dust were monitored in Ganja (400 µg/m³ in 2002) and in Mingachevir (400 µg/m³ in 2004 and 2005).

Table 6.5: Daily average concentrations of selected pollutants in Baku, 2000–2009

	MAC	2000	2002	2003	2004	2005	2006	2007	2008	2009
										µg/m ³
Dust	150	100	200	200	200	150	200	200	200	300
SO ₂	50	32	36	36	25	21	20	15	14	15
CO	3,000	1,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
NO _x	40	60	80	60	60	50	40	50	50	70

Source: State Statistical Committee, Statistical Yearbook 2002, 2008, State Department of Environmental Monitoring 2010.

The highest average daily concentrations of sulphur dioxide were monitored in Lankaran (66 µg/m³ in 2003). The highest average daily concentrations of nitrogen oxides were monitored in Baku (80 µg/m³ in 2002). Average annual concentrations of dust, sulphur dioxide, carbon monoxide and nitrogen oxides in Baku for the period 2000–2009 are shown in table 6.5.

MACs in Baku are exceeded in the case of dust and nitrogen oxides, but a comparison with other cities worldwide is not fully possible, due to not only a lack of information on PM10 but also different measurement methodologies.

As monitoring data are not processed using mathematical modeling, neither the concentration fields of pollutants in the air nor air quality projections for coming years are available.

Air quality standards

Air quality management is based on air quality standards inherited from the Soviet era (GOST standards), the maximum allowable concentrations (MACs). MACs are determined for a high number of different substances (88) and some of them are different from the WHO or EU standards in terms of both values and different definitions of compliance (table 6.6). Practically speaking, up to 17 of these pollutants are monitored.

Standards for stationary air pollution sources are also based on MACs, calculated in ad hoc terms of maximum allowed amounts of emissions per unit of time. Technology-based emission limit values or other generally binding quantified requirements to reduce emissions from stationary sources are not applied.

Two types of standards are applied for fuel quality and pollutants in motor vehicle exhaust. Standards for unleaded petrol⁵ are set by AZS 059 from 2001 and standards for diesel fuel by GOST 305 from 1982.

Standards for emission levels from petrol engines are based on GOST 17.22.03 of 1987 on hydrocarbons and carbon monoxide content, while standards for emission levels from diesel engines are based on GOST 21.393 of 1975 on smoke content.

Air quality management (especially air pollutant emission reduction) is not coordinated with the measures to mitigate climate change (GHG emission reduction), as a result of which the benefits of “one measure-two effects” approach are not achieved. Both main air pollutants and carbon dioxide, the major GHG, have the same dominant source – combustion of fossil fuels. Therefore, certain measures reducing consumption of fossil fuels have two effects: reduction of emissions of certain air pollutants (dust, nitrogen oxides, sulphur dioxide etc) and reduction of carbon dioxide emissions. On the other hand, certain other measures to reduce GHG emissions may have a negative effect on air quality (e.g. combustion of biomass or a fuel switch from petrol to diesel fuel). As it is necessary to reduce both air pollution and GHG emissions, applying these measures will reduce (energy efficiency, energy savings, and non-combustion renewable sources) while avoiding trade-offs between air quality and climate change mitigation.

6.2 Permit issuing

Description of current situation

Permit issuing procedures are more or less the same as those described in EPR I. Each installation, which is expected to have impacts on the environment, is subject to permits issued by the Department of Environmental Expertise within the Ministry of Ecology and Natural Resources. The Ministry decides whether intent should pass through the environmental impact assessment (EIA) process and whether full or limited EIA is to be carried out. In the case of intents with low environmental impacts, only technical documentation is required. Based on the results of the EIA process or the assessment of technical documentation, the permit is being issued. Together

⁵ Production of leaded gasoline was terminated in 1995.

Table 6.6: Maximum allowable concentrations (MACs) for major pollutants

Pollutant	MAC (µg/m ³)		24-hour average (µg/m ³)	
	24-hour average	Maximum	EU - standards	WHO - guidelines
Dust	150	500	50 for PM10	50 for PM10
Sulphur dioxide	50	500	125	20
Carbon monoxide	3,000	5,000	10,000 (8-hour average)	10,000 (8-hour average)
Nitrogen dioxide	40	85	200 (1-hour average)	200 (1-hour average)
Nitrogen oxide	60	400	-	-
Soot	50	150	-	-
Chlorine	30	100	-	-
Mercury	0.3	..	-	-
Formaldehyde	3	35	-	100 (30- minute average)
Furfurol	50	50	-	-
Hydrogen sulphide	..	80	-	150
Fluorides	5	20	-	1
Ammonium	400	200	-	-

Source: Ministry of Ecology and Natural Resources, 2010, Directive 2008/50/EC, WHO Air Quality Guidelines 2000, 2005.

with the permit, two normative documents are being prepared and approved:

- Maximum allowable emissions into the air with a validity of five years
- Maximum allowable discharges of wastewater with a validity of three years.

After the expiry of these permits or in the event of substantial change, the operator has to apply for a new permit, which may either be identical to the previous one or include new requirements in response to the change implemented.

The maximum allowable emissions (MAEs) for each relevant pollutant, expressed in mass units per time (tons per year or grams per second) are calculated on the basis of maximum allowable concentrations (MACs) using the EKOLOG dispersion model. Pollutants are divided among four classes depending on their health and environmental impacts. When MAEs cannot be achieved for some objective reason, the enterprise is requested to decrease concentrations in stages until they are reached.

Maximum allowable discharges (MADs) are calculated on the basis of MACs using the OSES dilution model. When MADs cannot be achieved for some objective reason, the industry is requested to decrease concentrations in stages until they are reached.

In the case of wastewater, the permit is required only if wastewater is not discharged into public sewers.

For waste, MENR issues permits for the disposal or treatment of waste at specific sites.

Before an installation goes into operation, an environmental passport must be developed. This document shows a collection of all relevant environmental information: emissions into the air, wastewater discharges, solid waste generation and also resource consumption, waste management, recycling or effectiveness of pollution abatement techniques. The draft environmental passport is submitted to the Department of Environmental Expertise for approval. The validity of the environmental passport is five years, but a new passport must also be prepared and submitted in the case of change.

At present, the concept of integrated permitting (IPPC) is not applied in Azerbaijan. Technology-based emission limit values or other generally binding quantified requirements to reduce environmental pollution are not applied. BATs (best available techniques) have not yet been defined and are therefore not taken into account during the permit issuing procedure.

6.3 Policies and strategies

The 1998 National Environmental Action Plan (NEAP) had set several objectives in air protection: regional qualitative improvement of air; inventory of industrial sources of air emissions; improvement in air quality in populated areas. By the end of 2009,

it could be seen that only very limited progress had been achieved. Taking into account the data of air quality monitoring, it is clear that there has not been any progress in terms of air quality. An inventory of industrial sources of air emissions is available.

The 2001 National Environmental Health Action Plan (NEHAP) had foreseen several actions to be taken to improve air quality. By now, some of them have been fully or partially implemented (rehabilitating and replacing old gas and dust filters in industrial enterprises, operation of monitoring system, public information, measures to reduce emissions from mobile sources), but other major important actions were not taken at all. For example, no new air quality standards were established and no air quality forecasting models were introduced.

The 2003 National Programme on Environmentally Sustainable Socio-economic Development laid down the main areas of sustainable development and a plan of action for the period 2003–2010 (Chapter 1). The Programme includes certain measures to address air pollution: rehabilitation and replacement of gas and dust filters in industrial enterprises; a switch to the use of unleaded petrol; prohibition of old non-compliant transport means; introduction of environmentally friendly transport; better pedestrian areas within cities; improvement of air quality through expanding green areas; or efforts to ensure that imported vehicles are equipped with catalytic converters and comply with EU norms. All these projects have been fully or partially implemented or at least begun. The improvement of abatement technique in industry and energy sector has led to a reduction in emissions from stationary sources; leaded petrol is no longer distributed; measures to reduce use of non-compliant cars in the business sector have been introduced; polluting industries are being phased out from Baku; and their sites are being greened.

The 2006 Comprehensive Action Plan for Improving the Environmental Situation for the period 2006–2010 provides in section 5 *inter alia* for the following:

- (a) In order to prevent atmospheric pollution from vehicles, to strengthen control of the technical condition of vehicles; to bring emission levels into line with European standards (EURO 3); to establish ecological control and metering stations; to organize decommissioning of unserviceable transport vehicles; to eliminate traffic jams using state-of-the-art installations and equipment; to increase pedestrian zones in cities; and to take other measures.

- (b) In order to ensure compliance of fuel, energy and heating supply systems and other industrial facilities in Baku, Nakhchivan, Ganja, Sumgayit, Ali-Bayramli, Mingachevir and other cities, to install treatment facilities and gas/dust abatement devices in them.

Both items have almost been implemented (licensing of obsolete vehicles in the business sector; introduction of a transport management system in Baku; completion and upgrade of transport infrastructure; a switch from fuel to gas; and improvement of abatement techniques).

The 2005 Fuel and Energy Comprehensive Perspective Development Programme for the period 2004–2015 and its related action plan include measures to help reduce air pollution (measures on the switch from fuel oil to gas, energy efficiency, refurbishment of installations, etc.).

Implementation of the 2004 State Programme on Alternative and Renewable Energy Sources contributes to the reduction of air pollution, provided that priority is given to non-combustion sources (hydro, wind, solar), as extensive combustion of biomass could lead to a decline in air quality (fine particulates, polycyclic aromatic hydrocarbons).

The draft Comprehensive Action Plan Improving the Environmental Situation 2011–2015 provides *inter alia* for:

- (a) Measures in planting greenery
- (b) Installation of new air quality monitoring stations
- (c) Doubling the control of technical state of vehicles and creation of regional technical control points supplied with modern measuring devices and equipment
- (d) New charges for exceedance of emission limit values

6.4 Legal and institutional framework

Legal framework

Since the first EPR in 2003, there have been few improvements to the legislative framework on air protection. The 2001 Law on Air Protection was last amended in 2007. This legislation (law and 13 bylaws from 2003) is rather obsolete and does not create an adequate framework for a modern and efficient air quality assessment and management system as applied in the EU or other OECD countries, such as Japan, the Republic of Korea and the United States of America.

There is no specialized legislation on environmental permit issuing. The Law on Environmental Protection provides for State environmental expertise (Articles 50–58). The Law on Protection of Atmospheric Air (Article 12) foresees a special permit for emissions of harmful substances into the air (MACs). Permits for discharging wastewater into water bodies are provided for by the Water Code (Article 78 and 79) and by the Law on Water Supply and Waste Water (Article 10). Permits for the disposal or treatment of waste at specific sites are covered by the Law on Industrial and Municipal Waste (Article 10).

Institutional framework

MENR is responsible for developing environmental policy, drafting legislation and regulations, implementing international agreements and conventions, and monitoring the state of the environment. Within the Ministry, several departments have specific responsibilities relating to air. The Department of State Environmental Expertise has responsibilities for permit issuing, the Department of Environmental Protection for inspecting and the Department of Environmental Monitoring for monitoring.

The 14 MENR regional departments (13 regions and Baku City) are the main inspection bodies (Chapter 2). Their responsibility is to inspect and monitor the implementation of legislation on environmental protection, especially as regards compliance with requirements set in air pollution permits. The regional departments are obliged to report their activities to the appropriate departments at the Ministry on a monthly, quarterly, half-yearly and annual basis.

Other ministries and State institutions have specific responsibilities with regard to air management:

- (a) The Sanitary Epidemiological Service of the Ministry of Health is responsible for the protection of the atmosphere in urban and working areas and the protection of the population against harmful effects;
- (b) The State Statistical Committee collects the data reports annually on the state of the atmosphere and on emissions;
- (c) The Ministry of Transport is responsible for measures to reduce emissions from transport sector (both at the level of vehicles and fuels and the level of infrastructure);
- (d) The State Traffic Police of the Ministry of Internal Affairs, together with MENR, inspects the observance of legal requirements for environmental pollution from car exhaust; and

- (e) The Department for Transport of the Executive Power of Baku is responsible for managing urban transport in Baku.

All environmental permits are, as well as EIA permits, issued (prolonged or renewed) by the Department of Environmental Expertise, which form part of MENR.

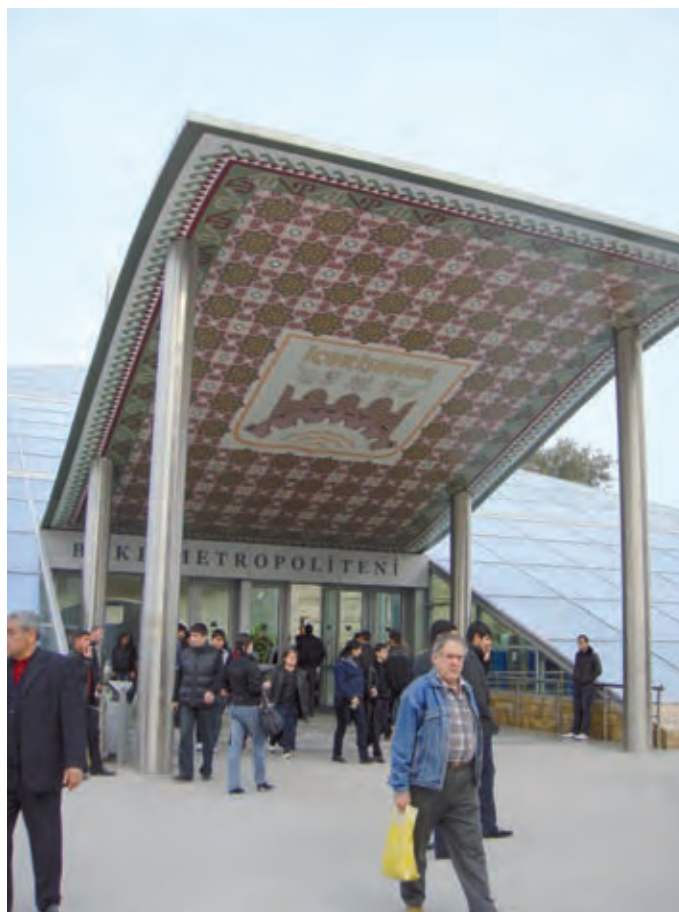
6.5 Measures to reduce emissions and improve air quality

Until 2009, air quality was not a priority. Recently, the Government took some steps to reduce the impact of the stationary sources on air quality; for example, a decision was taken to shut down certain of the most polluting installations in Baku and replace their capacity with newly-built ones located in lower populated areas. The Government decided to purchase five automated monitoring stations to be located in Baku and to ensure continuous measurements of PM₁₀, PM_{2.5}, SO₂, NO_x and ground-level ozone. Potentially, two more automated stations to be located in Sumgayit and one mobile monitoring station will be purchased. In addition, the establishment of one EMEP⁶ monitoring station has been approved by the Secretariat of the Convention on Long-range Transboundary Air Pollution (CLRTAP), with financial support pledged by the Government of Norway.

As emissions from mobile sources represent the major issue, the Ministry of Transport had prepared and started to implement several important measures. The Intelligent Transport System (ITS) for Baku was introduced recently and is to be fully operational in 2015. This scheme is expected to reduce transport-related emissions significantly by improving the flow of traffic and reducing traffic jams. In addition, other step have been or will be implemented in Baku: finalization of a city bypass, extension of metro lines, extension of parking sites, relocation of the railway station and harbour outside the city centre, and non-licensing⁷ of vehicles that fail to comply with at least the EURO 2 standard after 1 July 2010. The current quality of fuels is at EURO 2 level; starting from 2013 the EURO 3 level will be applied. The Ministry of Transport is also considering the introduction of a low emission zone in the centre of Baku.

⁶ Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

⁷ Licensing is only required for vehicles being used for economic activities; private cars are not covered.

*Baku Metro*

In order to limit dispersion of pollutants in the air, the Ministry of Transport has supported the planting of several hundred thousand trees along roads and railways.

In 2009, the European Commission, under the umbrella of the European Neighbourhood and Partnership Instrument (ENPI) East Regional Action programme, started preparation of a four-year Air Quality Governance project (for seven post-Soviet countries including Azerbaijan). MENR has expressed an interest in assessing the country's implementation potential for the EU environmental acquis and for CLRTAP protocols, transfer of methodologies (emission inventories, adaptation of international methodology (EMEP, European Environmental Agency (EEA)), to country-specific conditions, assessment of emissions from transport sector including emissions from air transport, assessment of health effects and risk assessment, economic assessment, environmental accounting, and costs of environmental degradation), economic instruments, gap analysis of existing environmental legislation, and support in drafting new legislation related to the reduction of emissions from transport.

Potential pilot projects could include an environmental strategy and action plan for Baku, mainly with respect to transport-related emissions, public awareness-raising or a feasibility study for the introduction of Integrated Pollution Prevention and Control (IPPC) in a selected sector (installation). The Air Quality Governance project is due to start before the end of 2010.

6.6 Measures to prevent and control environmental pollution

Water

Since 2003, progress achieved on sewerage and wastewater treatment has been rather modest, but ongoing and future projects are expected to improve this situation significantly. Several new biological wastewater treatment plants have been built (Chapter 7).

Waste

On waste, many important measures have been taken both with regard to remediation (e.g. remediation of municipal solid waste at disposal sites, upgrade of

the ISOTOP radioactive waste site, development of municipal solid waste incineration, establishment of the National Center for Hazardous Waste), and on prevention by the adoption of the National Hazardous Waste Management Strategy as well as of new legal provisions (Chapter 8). It is expected that the waste management situation will improve in the coming years.

Soil

Major attention to soil clean-up has been paid to the areas contaminated by oil pollution. The State Oil Company of Azerbaijan Republic (SOCAR) has accepted responsibility for this past pollution (Chapter 8). As new technologies and techniques are introduced, mostly in oil mining and manufacturing sectors, and soil clean-up continues, the trend for soil clean-up should be a positive one.

6.7 Conclusions and recommendations

The current national legal framework is obsolete and does not reflect the most recent internationally recognized developments in air quality assessment and management.

Air quality standards are based on the modification of the former Soviet system (maximum allowable concentrations – MACs); these standards are laid down for 88 pollutants; standards for PM10 or PM2.5 are not in place. Maximum allowable emissions, in fact emission ceilings at the level of particular installations expressed in mass units per unit of time, are calculated on an ad hoc basis from MACs, using a simple dispersion model. Technology-based emission limit values or generally binding quantified requirements to reduce emissions are not applied.

Recommendation 6.1:

The Ministry of Ecology and Natural Resources, in cooperation with the Ministry of Health, should:

- (a) *Revise the air quality standards and harmonize them with those applied in the EU (at least for major pollutants – PM10, PM2.5, sulphur dioxide, nitrogen dioxide and nitrogen oxides, carbon monoxide, lead, benzene and ground level ozone) and in later phase, introduce the EU standards for arsenic, cadmium, nickel and polycyclic aromatic hydrocarbons.*
- (b) *Adopt reasonable compliance deadlines for these new or revised air quality standards taking into account technical and economical feasibility; differentiated approach to particular pollutants should be applied (mandatory limit*

values, conditional target values and long-term objectives).

- (c) *Make proposals to the Government to ensure that financial resources needed for training and equipment to facilitate the transfer to these new standards.*

Since 2000, the total emissions of pollutants into the air do not exhibit any trend and are relatively delinked from economic development. Emissions of pollutants into the air from stationary sources show a declining trend and seem to be fully decoupled from the values of gross domestic product (GDP), and more than 50 per cent of generated air pollutants is abated. Emissions from mobile sources into the air have risen sharply in connection with the rapid increase in the vehicle fleet, especially cars. The emission inventory does not include all relevant items such as emissions from households and small businesses and emissions from diffused sources. Emissions from transport and from mobile sources are being assessed in an overly simplistic fashion on the basis of fuel consumption. Emission projections based on modeling are not available.

Air quality is not satisfactory in certain big cities, particularly in Baku, especially with regard to PM and nitrogen dioxide. Provided that the current economic development continues, the size of the vehicle fleet could increase by a factor of two or three in a short time, which would lead to a significant rise in emissions from mobile sources and to subsequent further deterioration of air quality in cities, especially for Baku.

The air quality monitoring network is obsolete and underdeveloped, with a limited number of stations, no automated stations, and no measurements of PM10, PM2.5 or ground-level ozone. No advanced treatment of monitoring data (modeling) is in place. No separate strategic or policy document on air quality management has been developed.

Recommendation 6.2:

The Ministry of Ecology and Natural Resources should:

- (a) *In cooperation with the Ministry of Health and the Ministry of Transport, continue to upgrade the air quality monitoring network, especially with automated monitoring stations in other big cities in connection with new/revised air quality standards;*
- (b) *Introduce a modernized methodology of emission inventories covering also small businesses, households and diffused sources of emissions*

and advanced methodology of assessment of emissions from mobile sources using the EMEP/EEA Air Pollutant Emission Inventory Guidebook;

- (c) *Introduce advanced air quality assessment methods (e.g. modeling by advanced dispersion models, chemical transport models or DPSIR models).*

Until 2009, air quality was not a priority in terms of environmental policy. Recently, several positive measures were implemented or planned to reduce emissions of pollutants into the air, especially in the case of mobile sources (development of transport infrastructure in Baku, licensing of vehicles, management of transport system in Baku, improvement of fuel quality, planting of trees around roads). Highly polluting industrial installations in Baku will be closed down and replaced by newly built ones located in sparsely populated sites. In addition, the monitoring network will be substantially upgraded in 2010–2012.

Recommendation 6.3:

The Ministry of Transport, in cooperation with the Ministry of Ecology and Natural Resources, as well as the Ministry of Industry and Energy should:

- (a) *Further develop the existing sustainable transport strategy to address more effectively air pollution due to traffic problems and congestions in major cities with the appropriate measures, while fully incorporating environmental considerations;*
- (b) *Adopt, implement and enforce as soon as possible EURO standards for mobile sources and set up adequate vehicle emission and technical control schemes to check compliance with these standards and to reduce emissions from private cars;*
- (c) *The Ministry of Industry and Energy, in cooperation with the Ministry of Ecology and Natural Resources, should adopt and implement new fuel quality standards and set up adequate fuel quality control schemes.*

Since 2000, the system of environmental permit issuing has been fully based on obsolete Soviet practice (ad hoc approach to individual polluting installations) and does not reflect recent developments, especially as for integrated permitting (IPPC), which takes into account all environmental media and all environmentally relevant issues. Best available techniques (BATs) have not been defined and are therefore not taken into consideration during the permit issuing procedure.

Existing legal provisions do not create a sufficient basis for permit issuing, especially the absence of technology-based emission limit values, but also the lack of guidance on BATs. The EIA's role in the permit issuing process is not fully defined and depends on decisions by the competent authority. Obviously, EIA is carried out after the decision on the location of newly built installation is taken.

Quantified requirements are only applied in the case of emissions into the air and discharges of wastewater, which are calculated on an ad hoc basis for individual installations. Generally, binding quantified requirements to reduce environmental pollution are not in place.

Introducing IPPC and BAT concepts as well as technology-based emission limit values and other technical requirements could bring considerable environmental benefits: an integrated approach to permit issuing would eliminate or at least minimize the transfer of pollution from one environmental medium to another. In addition, it would lead to effective use of energy and material sources and to the minimization of waste generation. Finally, it would ensure, together with technology-based emission limit values and other technical requirements, generally binding environmental performance of all installations while making it possible to set more stringent requirements in particular cases where compliance with environmental quality standards is endangered.

Application of Best Available Techniques (BAT) would lead, besides positive environmental impacts, to an increase in the general technological level of the country. EU BAT reference documents could be taken into account where possible when defining guidance for national BAT

The approach of ecological passports could be retained to serve as a background for integrated permit issuing in the case of existing installations in accordance with the IPPC approach applied in the EU, as all environmental information is collected in one technical document.

In the event that technology-based emission limit values and other generally binding pollution reduction requirements are introduced, the present ad hoc approach to permit issuing could be retained (in an updated form) to allow additional ad hoc flexibility in necessary cases (within the "space" created by generally binding requirements).

Recommendation 6.4:

The Ministry of Ecology and Natural Resources, in cooperation with other relevant ministries, should

- (a) Introduce technology-based emission limit values and other generally binding quantified requirements to reduce environmental pollution for selected major polluting sectors / industries on a step-by-step basis (including technically and economically achievable compliance deadlines);*
- (b) Define guidance for national best available techniques, taking into account country specific conditions; these national BATs should be taken as a background for setting technology-based emission limit values and for permit issuing;*
- (c) Start preparing new legislation setting rules for environmental permit issuing, by introducing the concept of integrated pollution prevention and control (IPPC);*
- (d) Define specifically the role of EIA within the permit issuing process; the current practice of environmental passports and the ad hoc approach to installations should become a part of the integrated permitting procedure.*

Since the ratification of the UNECE Convention on Long-range Transboundary Air Pollution (CLRTAP) in 2002, none of its protocols has been ratified or at least signed, whereas with other environmental conventions and protocols some progress can be seen. It should also be noted that some other countries in the region have moved towards ratification of recent UNECE CLRTAP protocols. Implementation of the requirements of protocols could bring about a considerable improvement in air quality in Azerbaijan.

Recommendation 6.5:

The Ministry of Ecology and Natural Resources should assess the costs and benefits of, and prepare the road map for, the implementation of the following protocols to the Convention on Long-range Transboundary Air Pollution: EMEP Protocol, Protocol on Heavy Metals, Protocol on Persistent Organic Pollutants (POPs) and the Gothenburg Protocol and then promote their ratification.

As an air quality assessment and management system is being developed and implemented separately from mitigation of climate change (reduction of GHGs emissions), potential synergies cannot be exploited. Use of an integrated approach, financing of GHG emission reduction measures could bring a “second effect” in improving air quality (and vice versa).

Recommendation 6.6:

The Ministry of Ecology and Natural Resources should, in cooperation with other relevant ministries, introduce an integrated approach to air quality management and climate change mitigation. In this respect, the Ministry of Ecology and Natural Resources should focus on preferential support to non-combustion renewable sources of energy (hydro, solar, wind) as well as to energy efficiency measures and energy savings.

* * * * *

Those following parts of recommendations from the first EPR of Azerbaijan that are still valid and their preceding conclusions are listed below.

The Law on Environmental Protection of 1999 provides the basis for developing and implementing programmes to combat air pollution. In 2001 a new framework Law on Air Protection was adopted. It sets out the requirements for monitoring, organization of activities, responsibilities of institutions, control and inspections, court procedures, and international cooperation. The Law foresees the issuance of 13 regulations with detailed procedures for air protection. The regulations have been adopted (last one in April 2003), and implementation has begun. The implementation of all these regulations for the Law on Air Protection will complete the modernization of air protection legislation in Azerbaijan.

The new Law on Air Protection also calls for changing the ambient quality standards from the old GOST standards to those consistent with international guidelines and standards such as the health-based air quality guidelines of the World Health Organization (WHO). The conversion of GOST standards into internationally accepted standards would be complicated and would require both training and financing. The standards require not only changes in quantitative values, but also changes in the whole data collection, processing and analysis systems, which is resource- and time-consuming.

EPR I - Recommendation 5.1:

- (a) The Ministry of Ecology and Natural Resources should as soon as possible, undertake the necessary actions to implement the regulations for the Law on Air Protection, in order to enforce air protection legislation in Azerbaijan.*
- (b) Consistent with the new Law on Air Protection, the Ministry of Ecology and Natural Resources, together with the Ministry of Health, should adopt and implement new air quality standards*

and emission standards for stationary sources. The air quality standards should be in line with WHO air quality guidelines. The necessary training, equipment and financial resources should be made available to facilitate the transfer to these new standards.

Azerbaijan ratified the Convention on Long-range Transboundary Air Pollution in 2002, but did not ratify any of its Protocols. The main reason is said to be the lack of information on the national situation and also the lack of resources and equipment. Azerbaijan intends to ratify three Protocols (POPs, heavy metals, EMEP) in the near future. Participating in the international specialist work within the framework of the Convention could assist in training Azerbaijani air specialists. But before Azerbaijan ratifies the

Protocols, it should carry out an analysis of the feasibility of ratification and develop appropriate plans and strategies for implementation of the Protocols.

EPR I - Recommendation 5.5:

- (a) The Ministry of Ecology and Natural Resources should develop appropriate strategies for the ratification and implementation of the Protocols to the UNECE Convention on Long-range Transboundary Air Pollution.*
- (b) The Ministry of Ecology and Natural resources should raise its need to develop air quality monitoring and reporting to address requirements under the Convention with the Executive Body of the Convention, thereby seeking assistance from the Convention's programme centres and from the other Parties to the Convention*

Chapter 7

WATER MANAGEMENT AND PROTECTION OF THE CASPIAN SEA

7.1 Current situation

Introduction

The main characteristics of the water resources of Azerbaijan are their limitations (average annual water deficit⁸ in the country is 4.75 km³)⁹, uneven spatial and seasonal distribution, and the fact that some 70 per cent of available surface water resources come from neighbouring countries and enter Azerbaijan in a heavily polluted state (namely the Kura and Araz rivers). About 80 per cent of the water consumed by the population for drinking and irrigation comes from contaminated rivers, posing serious challenges to public health. The Kura River delta and the Absheron peninsula constitute two of the five pollution hotspots of the entire Caspian Sea.

Since 2004, there have been significant investments, with loans and grants from multilateral and bilateral institutions, as well as by the State Oil Fund, in securing water availability, irrigation, water and sanitation cycle, and flood protection infrastructures. The State budget for the running costs of the institutions involved in water resources management has also increased. As a result, the population in rural areas using improved drinking water sources increased by 10 per cent (from 58 per cent¹⁰ in 2000 to 68.7 per cent¹¹ in 2006). Progress on sewerage and wastewater has been modest, but it is expected that with ongoing projects the situation will improve. Biological wastewater treatment is increasing nationwide and the Caspian Sea monitoring data show a decrease in the concentration of pollutants. On the other hand, there has been an increase in

water used for irrigation, and the level of water losses (around 30 per cent of the total water abstracted) has not changed significantly.

In the period 2004–2010, water tariffs were increased twice but the values are still rather low, not allowing the companies to provide services capable of recovering running costs and not acting as incentives for efficient water use. Irrigation tariffs are currently charged per water use instead of area, which is a positive first step. The budget of the Joint Stock Company Amelioration and Water Economy (JSCAWE) has increased, and equipment was acquired allowing for further maintenance and construction work each year.

An in-depth reform of water governance is still to be done. There are no water resource policy or strategy documents; there is limited coordination among the different entities (Government bodies, joint stock companies, users associations); and dialogue is reduced. The capacities of the staff (both in terms of the number of human resources and technically) to effectively use, manage and maintain the infrastructure that is being built need to be increased.

Quality and quantity of surface water

Azerbaijan's renewable surface water resources are estimated at 30 km³/year. According to the Hydrometeorology Service, this figure was computed around three decades ago, and the current exact overall surface reserves are not known. Azerbaijan has 8,350 rivers, but the majority are not perennial or disappear underground before reaching the sea. Some 350 rivers have a length of more than 10 km and only 24 rivers are over 100 km long. There are around 450 lakes in the territory of Azerbaijan, providing freshwater resources of 0.90 km³. Total lake area is some 395 km², but only 10 lakes are larger than 10 km². Azerbaijan boasts 63 reservoirs, of which only 4 have a volume larger than 1 km³. Mingechevir reservoir on the Kura River is the largest, with a capacity of 15.7 km³. The water is used for power generation and for irrigation.

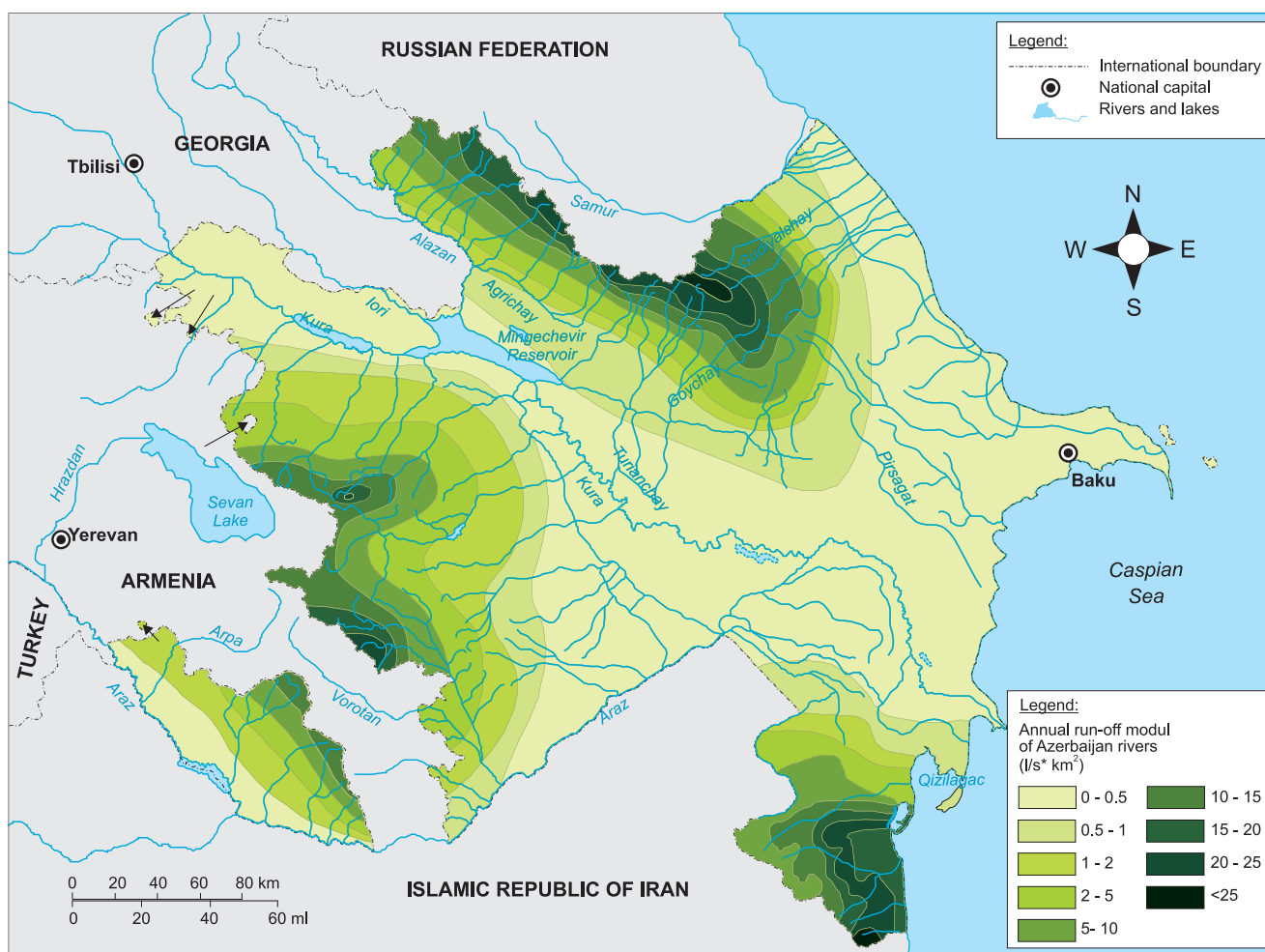
⁸ Water deficit is understood here as the prevailing condition that exists when the consumption of freshwater within a social entity exceeds the level of sustainable supply.

⁹ Imanov, F, Water Infrastructure of Kura River Basin within Azerbaijan, International Congress of River Basin Management, 2007

¹⁰ Multiple Indicator Cluster Survey 2000, http://www.childinfo.org/mics2_azerbaijan.html

¹¹ Demographic and Health Survey, State Statistical Committee and Macro International Inc., (DHS) 2006

Map 7.1: Run-off



Source: Ministry of Ecology and Natural Resources, 2010.

Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

During the process of preparing their Second National Communications to the United Nations Framework Convention on Climate Change (UNFCCC), Azerbaijan has performed together with Georgia and Armenia several runs of the PRECIS Regional Climate Model for different socio-economic scenarios and two Global Climate Models, HadAM3P and ECHAM4, to evaluate future climate in the region¹². Future climate scenarios will be compiled and agreed at the regional (Caucasus) level. Meanwhile the Hydrometeorological Service indicates that in Azerbaijan, the trend is for an increase in winter river flows and a decrease in summer flows, combined with a reduction of 15 to 20 per cent of yearly water availability.

Map 7.1 shows annual run-offs for rivers in Azerbaijan. Larger run-offs correspond to mountainous regions, while the Kura-Araz lowlands, the Absheron peninsula and the northern coast feature low flows promoting

water deficit. The much larger precipitation (and snow melting) in the ranges controls the magnitude and seasonal variations of the rivers in the lowlands. The map also depicts that a significant proportion of the surface water in Azerbaijan is locally produced. In fact, some 25 per cent (or 6.5 km³/y) of the discharge of the Kura River into the Caspian Sea comes from Azerbaijani national rivers. In addition, Azerbaijani rivers drain into the Caspian Sea 1.5 km³/y north of the Absheron peninsula, and 1.2 km³/y along the southern coast of Azerbaijan up to Gizil-Agach.

The Samur River plays an important role in terms of drinking water supply and irrigation in north-eastern Azerbaijan and the Absheron peninsula, via the Samur-Absheron channel. It originates in the territory of the Russian Federation and flows into the Caspian Sea at the Azerbaijani border. It is 216 km long and its basin area is 4,400 km². The Samur-Absheron channel provides water along its way from the border with the Russian Federation to Jerianbatan reservoir (0.2 km³). Negotiation is under way with the Russian Federation,

¹² Within the scope of the OSCE-funded Regional Climate Change Impacts Study for the South Caucasus Region

Map 7.2: Network of surface water quality monitoring stations

Source: Ministry of Ecology and Natural Resources, 2010.

Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

which wishes to even the water utilization of the Samur between the two countries, a plan that would result in a drop in the water available to Azerbaijan.

The Kura River basin covers 80 per cent of the territory of Azerbaijan. The Kura River has its source in Turkey, and flows through Georgia before entering Azerbaijan. Drawing from the Mingchevir reservoirs fed by Kura and Alazan rivers, the Upper Karabakh and the Upper Shirvan canals irrigate the lands of the Kura-Araz lowland. More than 70 per cent of the drinking water supply of Azerbaijan depends on the Kura River.

The ecological situation in the Kura River basin, including Azerbaijan, is dramatic. Azerbaijan has reported to UNECE¹³ that data from the Shikhli-2 station at the Georgian-Azerbaijani border show values higher than maximum allowable

concentrations (MACs) for a number of substances, e.g. 8-12 times for phenols, 2-3 times for oil products, 8-14 times for metals and 1-2 times for sulphates. The Araz River water entering Azerbaijan is reported¹⁴ to have MACs in excess of one hundred times for copper, molybdenum and other heavy metals— it should be noted that in some parts of the basin, natural geochemical background levels for some heavy metals are elevated. As a result, river water microflora and fauna disappear, preventing the self-cleansing process. This situation is caused by mining, leather and fertilizer industries along the rivers, and the lack of wastewater treatment facilities in Georgia and Armenia. The same situation occurs in Azerbaijan, and the quality of the surface water in these rivers only improves where no population is settled, as in the section between the Georgian-Azerbaijani border and Mengechevir reservoir.

¹³ Our Waters: Joining Hands Across Borders, UNECE, 2007

¹⁴ Azerbaijan Summary Report under UNECE Protocol on Water and Health, 2010

Although DDT (dichlorodiphenyltrichloroethane) was banned in 1986, the 2003 EPR referred to its content in the rivers in Azerbaijan. According to MENR, the results of monitoring over the last ten years show that DDT is not present in drinking water sources. However, some traces of DDT are still found in the Kura River, particularly after heavy rains. There has been some improvement regarding bacteriological pollution of water. According to the Hygiene and Epidemiology Centre, the amount of E-coli present in surface water throughout the country has been declining, and water-related outbreaks and incidents dropped from 14 per cent in 2005 to 11 per cent in 2008 of reported cases of dysentery and gastroenteritis.

Furthermore, the Araz River is said to be one of the most turbid in the world. Deforestation and overgrazing have led to erosion, causing high turbidity of river water. Also in mountainous areas of Azerbaijan, deforestation in the upper part of river catchment areas has led to poor soil protection with damaging mudslides. This in turn results in sedimentation of the rivers, and flash floods are frequent. Floods also occur frequently downstream of the confluence of the Araz River due to a combination of increased water level in the Caspian Sea and sedimentation in the river bed. This also prevents the Kura River estuary from playing its role as a breeding and nursery place for major species as the sturgeon. Emergency works on the Kura River delta have been carried out, frequently since 2003. Currently, there are some 1,800 km of flood protection structures, built by JSCAW along the rivers.

The National Environmental Monitoring Department (NEMD) ensures the monitoring of surface waters. This service has 44 monitoring stations for water quality sampling, of which 27 in different rivers, 4 in reservoirs (Aghstafa, Jeyranbatan, Mingechevir and, Shamkir), and 11 lakes (7 lakes on Absheron peninsula (Boyuk-sor, Red Lake, Yasamal-1, Masachir, Kurdechan, Bulbula, Khocahassan) and 4 lakes in different regions) and in 1 port (see map 7.2).

Once a month, samples are recovered from these stations and analyses are undertaken. According to MENR, some 17,000 analyses for over 50 indicators are performed each year. To check water quality at points of entry of transboundary rivers in Azerbaijan in 2005, analytical laboratories equipped with modern facilities started operating in Gazakh District on the Kura River and Beylagan on the Araz River. Three times a month, water is sampled and geochemical and physical properties are analyzed, in particular with regard to the presence of pollutants such as

oil, petroleum products, phenols, pesticides, heavy metals (once a month), and others. When a problem is detected, the competent authorities are alerted.

The quality of the water distributed to the population is inspected by the Center of Hygiene and Epidemiology of the Ministry of Health. In Baku districts, water is continuously sampled and analyzed in the center's laboratory. Regional offices analyze other reservoirs and report to the main office once a month. In each district, there are permanent sampling points. For Kura River water, samples are taken before treatment and at several stages during treatment. The center has a database but it is for internal use only. When alert values are received, a team is dispatched from the center to the area to address the situation. Several times a year, the center informs the national water company of various cases of non-compliance with water quality conditions and recommendations.

The MENR Department for Environmental Protection (DEP) takes water samples downstream and upstream of wastewater discharges as part of compliance verification procedures.

The total numbers of parameters included in the programmes for monitoring inland surface water quality are: NEMD: 47; the Center of Hygiene and Epidemiology: 41 (including 7 microbiological parameters); and DEP: 38. According to the 2010 study entitled Proposed System of Surface Water Quality Standards for Azerbaijan¹⁵, the physico-chemical basic quality elements (thermal conditions, oxygenation conditions, salinity, acidification status and nutrient conditions) are sufficiently monitored. Seven bacteriological parameters are monitored, but the intestinal enterococci (one of the two key bacteriological parameters in the new EU Bathing Water Directive 2006/7/EC) are not monitored.

Quantity and quality of groundwater

The Geological Exploration Service is finalizing the hydrogeological map, and the first version is expected during 2010. Since 2003, the Geological Exploration Service has maintained a cadastre of groundwater with 18 types of geo-referenced information ranging from existence and use of mineral and thermal water, to horizontal drainage and a borehole cadastre, which encompasses over 2,500 boreholes. The service operates 650 monitoring wells, for yearly monitoring of quantity and quality.

¹⁵ Project Water Governance in the Western EECCA Countries, TACIS/2008/137-153 (EC), 2010

Renewable groundwater resources are estimated at 86.7 km³/year. According to the Geological Exploration Service, the geographic distribution of groundwater is similar to that described in the EPR of 2003 (see table 7.2 of that document), implying that groundwater abstraction is not at an unsustainable level.

Groundwater resources are mainly restricted to the foothills and intermountain plains of the Greater Caucasus, Lesser Caucasus, Nakhchivan and Talysh. Groundwater in the lowlands often has a high salt content (nitrites up to 1.2 mg/l and nitrates up to 75 mg/l) due primarily to geological characteristics, as well as to poor drainage and, to some extent, to the use of fertilizers.

In some areas, groundwater is shallow and poorly protected, e.g. on the Absheron peninsula, where the mineral oil content is high in places (up to 50 mg/l). Industrial pollution is found in Sumgayit (heavy metals) and Ganja (aluminum up to 3.5 mg/l and iron up to 50 mg/l). Bacteriological pollution of the upper aquifers is observed in the irrigated areas, towns and on cattle farms. Since 2004, a series of projects have reportedly been undertaken such as the remediation of oil-contaminated land in the Absheron peninsula, 210 hectares in the old oil fields Bibi Eibat and 90 hectares on the territory of Binagadi. Also, the Sumgayit mercury-containing hazardous waste landfill has been cleaned.

Quality standards for groundwater do not exist.

7.2 Water uses and pressures on water resources

Water use

The 2010 data from the State Statistical Committee on water utilization evolution show that water abstraction initially increased, peaking in 2006 then declining. Fresh water use follows the same tendency but on a broader scale, with a drop in consumption of 1 km³ from 2006 to 2008. The volume of recycled and consequently used water has been increasing, albeit with some significant fluctuations, while water losses are still in the neighbourhood of 30 per cent, without significant change (table 7.1).

There has also been a decline in domestic and drinking water use since 2006. The 2008 value of 0.348 km³ corresponds to per capita consumption of about 100-400 l/day in the cities and 30-120 l/day in the villages. It is possible that part of this decrease is related to lesser consumption in larger cities as Baku due to improvements in the distribution network and implementation of water metering. However, it is expected that domestic and drinking water use will increase in the next years due to the programme for increasing the population's access to water throughout the country (see below).

In 2008, the largest contribution for the use of recycled water came from the production of electricity, gas and water (Table 7.2). At the same time, industry needs are mainly covered by recycled water. Most water loss occurs in agriculture, followed by production of

Table 7.1: Main indicators characterizing protection of water resources and their rational use, 2000-2008

	million m ³								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Water abstraction from natural water resources-total	11,110	..	10,075	10,772	11,440	12,050	12,360	12,270	11,735
per capita m ³	1,396	..	1,247	1,322	1,390	1,449	1,469	1,442	1,363
Fresh water consumption - total	6,588	..	6,754	7,370	8,019	8,607	8,865	8,371	7,886
of which:									
domestic and drinking purposes	449	..	503	512	498	521	523	360	348
industrial needs	2,316	..	1,977	2,264	2,264	2,360	2,508	2,157	2,042
irrigation and agriculture supply	3,819	..	4,248	4,579	5,240	5,710	5,817	5,837	5,474
Water losses during transportation	3,053	..	3,321	3,402	3,421	3,462	3,495	3,899	3,849
Volume of recycled and consequently used water	1,875	..	704	2,236	2,273	2,224	2,198	2,078	2,485
Discharge of sewage waters to surface reservoirs	4,106	..	4,596	4,749	4,817	4,878	5,164	5,237	5,325
of which purified	171	..	163	167	160	161	163	177	181

Source: State Statistical Committee, 2010.

energy, gas and water. These two activities are also the leading sources of discharges of sewerage waters into reservoirs. The percentage of treated water is only some 3 per cent of the water discharged, specifically 8 per cent for the extracting industry and 20 per cent for the manufacturing industry. Domestic wastewater is included in the item "other branches" (table 7.2).

Overall, since 2003 there seems to have been a slight improvement in the efficiency of water use and appropriate water quality considering the end use, in particular with regard to the use of recycled water and alternative sources of water when there is no need for fresh water. However, no significant progress has been achieved in terms of water loss. The very low proportion of purified wastewater implies that a lot of work remains to be done in the sanitation field.

Due to the different entities that are involved in groundwater use as well as the fact that a significant number of wells may not be registered, there are no exact figures for groundwater use in Azerbaijan. It is expected that, as the groundwater cadastre is developed, it will be possible to improve the estimates. Current estimates indicate yearly groundwater use of 1.1 km³, some 78 per cent of which for irrigation - about 148,000 ha are irrigated from groundwater. From a forecasted resource of 23,764 m³/day of groundwater, the Commission on Reserves has approved the use of 12,080 m³/day, of which around 25 per cent are currently used.

Household use of water

The 2006 data relating to the Millennium Development Goals indicate that the proportion of the population using some sort of improved drinking water source is 78.4 per cent overall, broken down as follows: 86.4 per cent in urban areas and 68.7 per cent in rural areas. According to the national water company, in 2010 some 72.3 per cent of urban population and 25.1 per cent of the rural population had access to the water network. People living in rural areas who are not connected to the network and cannot access springs, use water directly from rivers and canals.

The cost of treating water in Azerbaijan is quite high, inducing public health vulnerability. It is estimated that contaminated river water is the source for drinking and agricultural purposes for around 80 per cent of the population. Furthermore, in other areas there is high turbidity. Water from the Kura River after its confluence with the Araz River is the major source of water for Absheron peninsula, which hosts 28 per cent of the population.

According to the national water company, about one-fifth of the water supplied derives from groundwater. Of the 70 small cities, 48 are supplied with groundwater, and in 35 cities groundwater is the sole source of water supply.

Table 7.2: Main indicators characterizing use of water resources by economic activity types, 2008

million m³

	Water Abstraction from natural resources	Fresh Water consumption	Volume of recycled and consequently used water	Water losses during transportation	Discharge of sewage waters to surface reservoirs	of which purified
Total	11,734.6	7,885.9	2,485.0	3,848.7	5,325.0	180.9
including :						
Agriculture, hunting and forestry	10,488.1	5,438.5	..	3,707.3	3,986.0	..
Extractive industry	48.6	55.6	197.5	0.3	35.1	2.8
Manufacturing industry	46.3	94.3	269.3	1.0	36.8	7.4
Production and distribution of electricity, gas and water	1,112.2	2,194.6	1,995.8	138.4	890.3	27.9
Transport, storage and communication	29.8	56.1	22.3	1.6	32.6	3.9
Other Branches	9.6	46.8	0.1	0.1	344.2	138.9

Source: State Statistical Committee, 2010.

An assessment of 2007¹⁶ stated that almost everywhere in the country piped water supply was unreliable, and is often less than 12 hours a day, including in Baku in which the service was 13 hours a day. In 2010, MENR reported that the water supply and sanitation situation in Azerbaijan was still characterized by irregular supply and poor quality of water received by consumers. This is due to limitations on access to sources of water of appropriate quality and in an adequate quantity.

Rural water supply is a more serious problem. To improve the security of the population living along the banks of the Kura and Araz Rivers, the Presidential Order on Improving the Supply of Population with Ecologically Pure Water is being implemented. Water purification units have been built in 122 villages in 12 districts, providing a population of 224,000 people with drinking water meeting WHO standards. Currently, each resident of the countryside gets up to 30 liters per day of water for drinking purposes. It is expected that this programme will cover 500 villages and 800,000 people.

Increase in safe water for Baku, Sumgayit and Absheron peninsula settlements is also ongoing. By the end of 2010, 5 m³/s high-quality drinking water from Alazan-Agrichayskoy depression in Oguz region will be provided to the Absheron peninsula when the 250 km Oguz-Gabala-Baku water pipe will be completed.

Furthermore the largest reservoir in the country, Takhtakorpu Water Storage Reservoir and Electric Power Station¹⁷, is being built as the Samur-Absheron canal is being rebuilt. It is expected that with all these improvements, Baku will be served 24 hours a day with 19 m³/s of drinking water. Water loss is still quite a challenge. According to Azersu representatives, most water leakage in the cities occurs inside buildings. If water tariffs do not reflect real costs, there will be no incentive for households to repair these systems.

Wastewater

The national water company indicates that in 2010, some 34 per cent of the population was connected to sewerage systems, 54.2 per cent in urban areas and 8.3 per cent in rural areas. In addition, as mentioned

above, only about 3 per cent of the discharged water is treated (8 per cent for extracting industry and 20 per cent for manufacturing industry). Municipal wastewater is not treated at all.

The 2006 MDG data indicate that the proportion of the population using improved sanitation facilities is 77.3 per cent, with 83.0 per cent in urban areas and 70.4 per cent in rural areas. The most common sanitation facility used in rural areas is the pit latrine.

The 2003 EPR stated that in Baku, 72 per cent of population was covered in terms of sewerage but only 45 per cent of the water was mechanically treated and 5 per cent biologically. Similar problems existed in other parts of Absheron peninsula, affecting the inland environment and the Caspian Sea.

The situation has improved in recent years. The Govsanskaya (at Hovsan) wastewater treatment plant (WWTP) has been provided with aeration stations and cleans 400,000 m³/day, and has a maximum capacity of 600,000 m³/day (about 50 per cent per cent of the 2008 total water supplied to Baku City¹⁸). Biological wastewater treatment plants were also built in the villages of Buzovna (10,000 m³/day) and Mardaken-Shuvelan (20,000 m³/day). In Sumgayit, a biological water treatment plant with a capacity of 20,000 m³/day (about 7 per cent of the 2008 total discharge of Sumgayit territorial division) is nearing completion. Furthermore, while the construction of a larger wastewater collector is ongoing, 16 modular WWTPs were built over a stretch of 86 km on the north coast of Absheron peninsula, for biological wastewater treatment of 6,140 m³/day. Moreover, the sewage system is being rehabilitated in different cities and towns of Absheron peninsula. The problem of rainwater collectors in Baku City that used to mix some faecal waters and drain into Baku Bay has been addressed, and sewage mixing was discontinued with a consequent decrease in contamination loads at the bay. As a result of all the above measures, the bathing water quality of the Caspian Sea is improving, but much work remains to be done both in Baku City (4 other WWTP) and on the Absheron peninsula.

The 2003 EPR stated that WWTPs existed in 16 cities and towns and mostly were partly out or completely out of operation. In 2010, the situation has not changed, and cities such as Ganja, Sumgayit, Mingachevir, Lankaran have only mechanical treatment and the water treated does not meet sanitary requirements. The projects mentioned above will address not only

¹⁶ Project appraisal document proposed to Azerbaijan for a National Water supply and sanitation project, World Bank, 2007

¹⁷ <http://www.azerkorpu.com/content.php?lang=en&page=4&nid=36>

¹⁸ According to State Statistical Committee data

Box 7.1: Investments in water sector

Since 2004, a number of large investments in irrigation have been undertaken, with the support of the Islam Development Bank, the Asian Development Bank, the World Bank, other international financial institutions, and the State Budget and the State Oil Fund. The investments have consisted of construction/rehabilitation of channels, collectors and inter-farming collectors, reservoirs, and 535 new boreholes, and have improved irrigation in more than 30 per cent of total irrigated land, namely, (i) 150,000 ha in Baku, Sumgayit and the Absheron peninsula; (ii) 140,000 ha along the Araz basin; (iii) technical assistance to create water users associations for some 47.9 ha in 11 districts; (iv) in the north zone, improvements span 62,600 ha, including 40,8000 ha in Gusar District, 11,4000 ha in Khachmaz district, and 10,400 ha in Davachi district, and in Guba; (v) 20,834 ha in the districts of Shamkir, Goygol, Samukh and Goranboy; (vi) 18,465 hectares along the right shore of Tovuzchay; (vii) some 673 ha worth of new irrigated areas were created in Goytapa district; and (viii) 600 hectares in land distributed to internally displaced families in *Qayidis*.

It should be mentioned that part of the investments secured water not only for irrigation, but also for dinking purposes and for industry.

water treatment but also WWTP and modern standard sewage systems.

Agriculture

Azerbaijan is highly dependent on irrigation for most of its agricultural production. In 2008, 5.47 billion m³ were used for irrigation. Irrigation's share of total water abstraction increased from 42 per cent in 2002 to 46.6 per cent in 2008. Table 7.1 shows that water losses during transportation have not changed significantly, from 31.5 per cent in 2003 to 32.8 per cent in 2008 – according to JSCAWE the value for 2009 is 31 per cent.

The total area of irrigated land in 2008 was 1.432 million hectares, about 30 per cent of the total utilized agricultural area of the country. About one-third of irrigation is mechanical, or 349,400 hectares. About 147,700 hectares are irrigated from boreholes equipped with submersible pumps, and about 68,200 hectares require diesel pumping stations. Irrigation channels were built during the Soviet era to irrigate the sovkhozes and kolkhozes, but with the privatization of land that accompanied the new regime, thousands of new landowners started to have special needs. Given its extension and the fact that it occupies the lowlands of the Kura river basin, the Aran region accounts for 60 per cent of total water consumption for irrigation throughout the country.

Currently, JSCAWE manages 52,000 km of irrigation channels (only some 10 per cent are concrete built channels), 30,000 km of drainage collectors, 16 dams, 135 water reservoirs, and 7,000 boreholes equipped with water pumps. In addition, the company manages 1,800 km of flood protection structures. In 2009, the company had a yearly budget of 160 million manat allocated from the General State Budget, but is only able to recover around 2.7 million manat/year selling

water (the price of irrigation water is very low). Since 2003, new machinery has been acquired and there has been an increase in the yearly budget. Currently, JSCAWE is able to clean every year some 1,000 km of irrigation channels (400 km in 2003) and 400 km of flood protection structures (100 km in 2003).

As an attempt to strengthen irrigation management at local level and ease the burden of the centralized entities, institutional mechanisms were set up to create water user associations, improve the nature and collection of irrigation service fees, and encourage users to share operating and maintenance costs. There are currently some 540 farmers' associations that buy water from JSCAWE (upstream regime) and sell to farmers (downstream regime). The associations set (under the supervision of JSCAWE) the water tariffs the farmers have to pay and some cover maintenance costs for equipment and irrigation channels.

However, efforts are still insufficient to meet needs, and irrigation infrastructure continues to suffer from a number of problems, including the following:

- (a) Deterioration of infrastructure and pumping equipment due to insufficient maintenance, inducing water losses;
- (b) The real cost of water distribution is not recovered (in particular at upstream regime) to avoid making agriculture uneconomic; this results in high reliance on pumped irrigation (over 500,000 ha) and does not promote efficient use;
- (c) Inefficient water distribution and application: farmers' needs along the channels vary, and sub-channels continue to be built in response to the specific needs of some farmers;
- (d) Users' contributions to operating and maintenance expenses are negligible, despite some improvement.

Industry

Industrial water use is regulated by means of MENR-administered pollution permit issuing defining the quantities of water use and the quantity and quality of wastewater discharge based on reporting: there are 38 water use and discharge inventories by individual sources that are compared against environmental standards, as well as an effluent charge system.

Quality standards are often not respected as far as industrial effluents are concerned. In such cases, MENR issues a permit valid for three years defining the quantity and quality of the wastewater discharged on a temporary basis, while the industry improves its system.

Nearly 70 per cent of industrial complex is concentrated on the Absheron peninsula, with the two largest industrial centers located in Baku and Sumgayit. The collapse of the Soviet Union has led to much lower production or the outright closure of many factories, resulting in less discharge of industrial wastewater. Outside Baku and Sumgayit, as few as 33 operating industries are registered, the majority connected to agricultural production.

After declining from 3.418 km³ in 1990 to 1.977 km³ in 2002, industrial water use peaked at 2.5 km³ in 2006 then decreased again to some 2 km³ in 2008. According to State Statistical Committee data, recycled and consequently used water meets some 55 per cent of industrial water needs.

In Baku and on the Absheron peninsula, water for industrial use is often supplied by the public system, but there are other sources of surface water and groundwater. Table 7.3 shows that industry also uses recycled water or so-called technical (untreated) water. Another important aspect to note is that the largest amount of water consumption in industry occurs in the Aran region (87 per cent of the total in 2008), in particular in Mingchevir city (55 per cent), which is related to hydropower production, and Shirvan (30 per cent).

There are no recent data on industrial water pollution, in particular for inland waters such as from the Aran region. Data described in the section on Caspian Sea issues shows that there has been an improvement since 2004 in terms of Caspian Sea quality.

7.3 Caspian Sea issues

The main Caspian Sea issues are water pollution from oil and gas industry, water pollution from households and from the Kura River delta, sea level oscillation, and bioresources in the Caspian Sea (stocks of species, illegal fisheries and invasive species).

Azerbaijan is part of the Caspian Environment Programme, which has been under way since 1998. In the first phase, which ended in 2003, a Strategic Action Programme for Caspian Sea protection was formulated and endorsed with the other Caspian Sea coastal countries. At national level, the Caspian Complex Environmental Monitoring Administration

Table 7.3a: Caspian Sea water quality monitoring data

	NH4		Suspended particles		Synthetic surfactants	
	2004	2009	2004	2009	2004	2009
Siyazyansky water sewerage	12.3	11.5	27.7	26.0	..	..
Ltd. Davachi Broiler	2.0	0.7	11.0	9.0	..	..
Sumgait regional sewage treatment	2.9	1.3	26.0	20.0	2.5	0.8
Govsanskaya aeration station	12.0	10.0	10.5	8.0	2.9	0.8
Myardyan						
Shyuvyalanskii-biological treatment facilities	3.0	1.3	25.0	8.0	2.9	1.8
Rain, rain collectors	15.5	10.8	40.0	20.0	5.0	2.0
Lenkaranchay River	3.5	0.4	55.0	18.0	4.6	0.6

Source: Caspian Sea Monitoring Centre, 2010.

(CCEMA) was founded within MERN in 2001 to focus on monitoring issues. CCEMA has a staff of 180 and is equipped with vessels, a modern laboratory and regional offices at three other locations. The center monitors the 955 km-long shore of Azerbaijan (from the north to the south), the beach areas as well as offshore. Some 340 monitoring points have been established, to cover run-offs entering the Caspian Sea (310 industries, wastewater treatment plants, rivers), while 31 entities and installations (e.g. platforms) function at sea. More than 4,000 water and benthic samples are analyzed each year.

With the Integrated Plan for the Improvement of the Ecological Status of the Azerbaijan Republic (Decree No. 1697, 2006) more intense protection and rehabilitation measures were started. They were further reinforced by Decree No. 2244, 2007 on "Some Measures on the Protection of the Caspian Sea from Pollution" signed by the President of the Azerbaijan Republic.

The National Programme on Environmentally Sustainable Socio-Economic Development of 2002 states that the Caspian Sea received annually 1.5-2.0 million tons of oil products, 15-20 thousand tons of suspended substances, 60-65 thousand tons of sulphur, 250-300 thousand tons of chlorines, up to 15-20 tons of phenols and other pollutants. According to CCEMA data, tables 7.4 (a) and (b), the situation on the Absheron peninsula is improving. Hydrocarbons have been decreasing in the majority of the stations sampled, and the same holds true for ammonia and suspended particles. These results are due to the improvement of rainwater sewerage and wastewater treatment plants, and the cleaning of onshore oil wells as well as better environmental procedures for oil operations.

With regard to household wastewater, the majority of swamps and wastewater ponds in Bilgah, Buzovna, Mardakan, Nardaran, Novkhani, Pirshagi and the Sumgayit coastline have been rehabilitated and the ecological balance have been restored. To this end, 16 stations were established in 2008–2009 with a capacity to refine 6,140 m³ wastewater per day. In addition, as stated in different sections, wastewater treatment plants on the Absheron peninsula and in coastal towns have been equipped with biological treatment facilities.

However, coastal cities and towns (including Baku) are growing faster than the infrastructure can handle, and increased efforts need to be undertaken to avoid regression.

The Kura River delta continues to be a major Caspian Sea pollution hotspot. Azerbaijan needs to promote wastewater treatment on its territory as much as possible to help clean the river. However, further investments are necessary for cleaning flows entering Azerbaijan (the Kura and Araz Rivers), a problem which requires international joint action with neighbouring countries.

New technologies and cleaning devices and procedures are being used for oil and gas exploration on the Azerbaijan section of the Caspian Sea. Moreover, the oil companies are removing some polluting wrecks from the seabed. The year 2010 was declared the Year of the Environment, and one of the actions undertaken is to clean up oil-contaminated areas of the Absheron peninsula. One example is the clean-up of the old oilfields of Bibi Eibat with areas of 210 hectares and 90 hectares on the territory of Binagadi, which will strongly influence rainwater run-off into the Caspian Sea.

Table 7.3b: Hydrocarbon contents

	mg/l	
	2004	2009
BP-Azeri field		
Seawater	0.058	0.050
Benthic sample	2.700	0.070
BP-Shah Deniz		
Seawater	0.160	0.040
Benthic sample	2.600	0.060
SOCAR-field Gyunyashli		
Seawater	0.080	0.040
Benthic sample	0.140	0.030
SOCAR-field Bahar		
Seawater	0.090	0.030
Benthic sample	0.170	0.060
SOCAR-field March 8		
Seawater	0.070	0.050
Benthic sample	0.110	0.030

Source: Caspian Sea Monitoring Centre, 2010.

One problem encountered is siltation of riverbeds and irrigation channels, which increases the tendency towards flooding. JSCAWE has taken some steps to deepen water channels near the coast, but a programme based on field data covering geographical and seasonal river and water channels run-off variations needs to be introduced in order to devise and implement an adequate solution to the problem.



Water collection system in the Stone Age, Gobustan UNESCO World Heritage Site

Actions aimed at increasing and protecting Caspian Sea bioresources are ongoing. One aspect is combating illegal fishing. MENR reports that in 2009, 71 law violations were identified and 59 persons brought to account for such violations, of which 31 cases were of a criminal nature. In connection with damage to biological resources, a claim amounting to 55,743 manat was made and a penalty imposed. Another aspect is the construction of breeding plants for fish to be released into the Sea. Alongside increasing baby fish population in the sturgeon fish hatcheries, efforts have been undertaken to create feedstuff for baby fish with live feed organisms in accordance with biotechnical norms. In 2009, 7,670 baby sturgeon and 130,000 baby goldfishes were released from the plants into the Caspian Sea. Overall, 416.3 million fishery-grown baby fishes of various species were increased artificially and naturally then released into specially designed water basins. Sturgeon lay eggs in the river and need specific habitat characteristics. However, siltation forces the sturgeon to go further inland when possible, and river pollution ends up as an obstacle to breeding. New channels were dug from 2004 to 2006, and negotiations are under way to increase the river depth closer to the coast.

One major example of an invasive species in the Caspian Sea is the *Mnemiopsis leidyi* (jellyfish). Species have invaded via ships' ballast water. It is potentially the most damaging and most acute threat recorded so far, and may have already irrevocably changed the composition of the zooplankton of the

Caspian Sea. Catches of fish species such as kilka have decreased 30-fold. Jellyfish came from the Black Sea, where a sharp drop in some fish stocks has been documented. Azerbaijan is part of the international cooperation on the monitoring and research on the *Mnemiopsis leidyi*, but for the time being there is no proposed solution. The species is monitored along the coast of Azerbaijan, and their number and biomass have been increasing through the years with steep rises and declines.

7.4 Policy objectives and management

Policy framework

There are no specific water policy and water strategy documents in Azerbaijan. National programmes and actions plans contain components addressing water issues and together form the water policy. Given the amount of actors involved in water issues and the limited communication among them, the lack of water structural documents is an obstacle.

According to the National Programme on Environmentally Sustainable Socio-economic Development (approved in 2003), by 2015, the entire population should have access to water of adequate quality. The comprehensive action plan for improving the environmental situation in Azerbaijan (2006–2010) has increased the priority given to the protection of water resources, the restoration of natural water protection environments such as forests, and the provision of safe drinking water to the population.

The State Programme of Regional Socio-economic Development has been approved for the periods 2004–2008 and 2009–2013.

All these programmes have managed to attract funds for the development of water and sanitation infrastructure in the country. Since 2001, the Asian Development Bank has approved loans for projects amounting to US\$ 800 million for water and sanitation in secondary cities and periurban areas. The World Bank has approved loans worth US\$ 490 million to improve water and sanitation conditions in 43 districts. Furthermore, bilateral cooperation with such countries as Japan and with other financial institutions is continuing.

Ongoing projects cover 80 per cent of the country's urban population, and cover the construction and renovation of reservoirs, aqueducts, water and wastewater treatment plants. Works are expected to end by 2013, and are mainly implemented by Azersu (the national water company), together with the State Amelioration and Water Management Agency (SAWMA) in the Autonomous Republic of Nakhchivan. Construction work has already started in some cities (Agdash, Ganja, Goychay, Nakhichevan, Sheki and Shemakha), while in other cities the design phase has been completed. Since Azersu has for the moment exhausted its capacities to implement projects – it is also implementing the rural water programme referred above – JSCAWE will implement projects in 21 of the districts. According to Azersu, the problem of identifying water sources has been solved for all regions.

As stated above, the Presidential Decree “On Certain Measures for Improving Provision of the Population with Ecologically Clean Potable Water” defined water conditions for the rural population. Following the target of 2015, it is expected that this programme will cover a population of 800,000.

Other aspects of water policy are also being addressed through projects. The investments on irrigation were referred above. In addition, the German Government, through its technical assistance agency GTZ, works together with the Ministry of Emergency on disaster risk management, including floods. A national project on adaptation of the water sector to climate change on the southern slope of the Greater Caucasus is being prepared by UNDP. It includes measures to promote management of flood risks and the safety of vulnerable mountainous communities.

The UNECE-led National Policy Dialogues (NDP) Programme provides practical assistance to the countries of Eastern Europe, Caucasus and Central Asia in strengthening integrated water resources management (IWRM) in line with the principles outlined in the UNECE Water Convention on the Protection and Use of Transboundary Watercourses and International Lakes, the EU Water Framework Directive (WFD) and other relevant UN and EU documents.

The NPD is a platform for cooperation among national stakeholders in the water sector and specifically for the development of a national water strategy based on IWRM principles as well as the legal and institutional aspects of the transboundary water cooperation with neighbouring countries. The NPD/IWRM will also serve as an instrument of coordination of the donors activities in the water sector.

On 15 January 2010 the Ministry of Ecology and Natural Resources has submitted a request to the UNECE to start the National Policy Dialogue (NDP) process on integrated water resources management in Azerbaijan. UNECE in cooperation with the Ministry is setting up a steering committee on NPD/IWRM.

Legal framework

The majority of water-related laws in Azerbaijan have not changed since 2003, and nearly no amendments have been introduced. The water framework law is the Water Code adopted in December 1997.

The major principle of the Water Code is a comprehensive and integrated approach to surface water management. The other major principles are: (i) municipalities have jurisdiction over water bodies of local importance, and are able to determine the resources required for domestic use of water and have the responsibility to control and implement measures of environment protection in the corresponding territories; (ii) provision of the population and other consumers with water; (iii) separation of water protection functions from water use/water management functions; (iv) balancing of economic development and protection of environment and natural resources.

The Water Code is complemented by thematic water laws dealing with irrigation, water supply and sanitation, municipal water management, environmental protection and others, adopted before 2003. Water regulatory measures are rounded out by laws of different sectors that contain sections or chapters dedicated to protection and quality of water



A mountain stream near Ismailli State Reserve

resources. Some examples are the 1998 Forestry Code, the 1998 Fishery Law, the 1998 Law on the Electric Power Sector, 1999 the Land Code the 1999 Wildlife Law and the 2006 Law on Phytosanitary Supervision.

The main directions for the development of the water amelioration sector were approved in 1996 and consist of rehabilitation of priority irrigation and drainage schemes, improvement of water management, and the introduction of an Irrigation Service Fee. Resolution No. 17 (January 21, 2002) changed the Irrigation Service Fee from a volumetric calculation to an area-based one, with a fixed per hectare rate per rayon, independent of the crop irrigated. However, this fee did not encourage efficient water use. With the technical assistance of the World Bank¹⁹, the Law on Amelioration and Irrigation was amended in April 2004, with the inclusion of 15 articles and the amendment of 11. The goal was to establish the concept of association of water users – a non-governmental organization (operator) – for water distribution and to regulate its operation. Moreover, in 2007 the nature of the irrigation service fee was also improved, as will be discussed below.

The 2010 study Proposed System of Surface Water Quality Standards for Azerbaijan undertaken via a TACIS project²⁰ concludes that the national water

laws are in line with internationally agreed modern regulatory instruments, but nevertheless present weaknesses. Water resources are not managed on the basis of the basin principle. In some cases, water quality norms and standards are overly stringent and nearly impossible to comply with. Another study²¹ concludes that the Water Code does not create an appropriate framework for overall water resource planning, water allocation and the creation of secure water rights, thus failing to address the key issues needed in a water code in a market economy. Different studies concur to recommend that the general regulatory framework should be modified to render current laws operationally applicable.

Within the scope of the TACIS project mentioned above, a legal reform is ongoing. A major step is the statute of the State Commission on Water Issues, which was developed and submitted to the Cabinet of Ministers in October 2009. Another result is the proposal of new standards, which have been submitted to the Commission of Standards under the Ministry of Foreign Affairs.

Azerbaijan is also part of different regional²² and bilateral (with neighboring countries) water agreements, for both transboundary waters and for

¹⁹ Irrigation distribution systems and management improvement project (2003-2010), World Bank

²⁰ Project Water Governance in the Western EECCA Countries, TACIS/2008/137-153 (EC), 2010

²¹ Irrigation distribution systems and management improvement project (2003-2010), World Bank

²² Such as the UNECE Water Convention (ratified in March 14, 2000) and its Protocol on Water and Health (ratified in Oct. 22, 2002)

the Caspian Sea. The obligations resulting from these agreements and their implementation are dealt with in Chapter 4 of this EPR.

Norms and standards

The first EPR noted that the design of water supply and wastewater infrastructure in Azerbaijan is still based on the building codes developed during the Soviet era known as SNIP standards. These norms set high consumption rates, usually 400 liters/day per capita, and require duplication of main pipelines and high storage capacity. This problem is somehow circumvented, since most existing water-supply systems have difficulties in meeting these standards, and the new ongoing constructions mentioned in previous sections are in line with currently less stringent international accepted standards (e.g. WHO or EU).

Currently, surface water quality standards are established following the Rules for Protection of Surface Waters against pollution (RPSW) of 1994 (adopted by Azerbaijan's State Committee for Environmental Protection and Ministry of Health) and the Sanitary Rules and Norms for Protection of Coastal Sea Waters against pollution in water use areas (HR No 4631-88). The Hygienic Norms and Rules contain the sanitary and hygienic norms for: (i) water bodies used for drinking, irrigation and recreational purposes and for the needs of the food industry; (ii) norms and rules for protection of water bodies relative to various economic activities; (iii) wastewater discharges to water bodies and elsewhere to the environment; (iv) avoidance of pollution from infrastructure or equipments and from the operation of facilities. It also identifies a list of 341 chemical substances for which sanitary maximum allowable concentrations are established, including ammonia, fluorine, sulphates, (heavy) metals and organic micro-pollutants.

The 1992 Law on Sanitary and Epidemiological Welfare and the 1999 Law on Environmental Safety stipulate that the quality of the untreated water used for drinking and recreational purposes must comply with hygienic standards. In accordance with the 2000 Law on Water Supply and Wastewater, drinking water sources should be protected through pollution prevention measures in order to meet the requirements of sanitary and environmental legislation.

As mentioned above, there are no quality standards for groundwater in Azerbaijan. Nor does any classification exist for groundwater types.

Surface water quality standards are identified for three water uses: (a) abstraction of water for household/drinking needs of population and food industry; (b) recreation and agricultural irrigation; (c) fishery, protection of aqueous bioresources in the whole. The first two are regulated by the 1994 Rules for Protection of Surface Waters against pollution. The regulation establishes three water classes requiring different types of treatment to become drinking water. Surface water that fails to meet the quality limits for category 3 cannot be used for the production of drinking water.

The rules and criteria for fishery waters are regulated by the above rules, together with the Decree No. 146 of the Cabinet of Ministers (1999) and the Sanitary Rules and Norms for Protection of Coastal Sea Waters against pollution in water use areas (HR No 4631-88). Fishery waters comprise waters for living, reproduction and migration of fish and other aqueous organisms. There are three categories of fishery waters: (i) superior – important reproduction and feeding areas, wintering areas of high value fish species and other commercially valuable organisms, as well as protected areas of any aqua-farm; (ii) first – water bodies used for protection and reproduction of valuable fish species with living requirements to high oxygen content in the water; and (iii) second – other water bodies used for fishing activities.

The TACIS study concludes that the surface water quality standards of Azerbaijan need to be improved, namely, via incorporation into a more concise, practical and economically feasible system. In fact, since requirements are overly stringent they are not enforced. Moreover, since the number of parameters expected to be regulated is so large (341), the number of parameters actually monitored is only a small fraction. What is more, the main central laboratories are not always able to analyze the monitored micro-pollutants at concentration levels corresponding to the maximum allowed concentrations (MACs).

It is worth noting that since all surface waters are designated as (potentially) suitable for fishery, surface water bodies that are merely used for abstraction of drinking water or recreation also have to comply with the more stringent MACs for fishery waters. At the same time, the MACs for fishery waters for several parameters are quite comparable with the EU defined Priority Substances. On the other hand, despite the large amount of parameters to be monitored according to Azerbaijan legislation, only for about one-third of the EU Priority Substances are covered by the list. In particular, the toxic pollutants are poorly covered in the current monitoring programmes.

The standards for plants for the treatment of effluent wastewater in Azerbaijan are among the most demanding in the world. For example, the standard for BOD is set at 3 mg/l for fishing water and 6 mg/l for other waters. In addition, wastewater must be chlorinated, which is unnecessary and leads to the presence of harmful organochlorine compounds in effluents. There is currently a proposal under the Standards Commission to align these values with EU, for chemical demand 125 mg/l; suspended particles 35 mg/l; and BOD 25 mg/l.

Institutional framework

The following ministries and institutions are involved in water management:

- (a) The Ministry of Ecology and Natural Resources (different departments)
- (b) The Ministry of Health
- (c) The Tariff Council, with the participation of the Ministry of Economic Development, the Ministry of Finance, and the Ministry of Agriculture
- (d) The State Amelioration and Water Management Agency in the Autonomous Republic of Nakhchivan

Further to the reforms of 2003, there are two major players as regards utilization of water resources:

- (a) The Joint Stock Company Amelioration and Water Economy
- (b) The Joint Stock Company Azersu (the national water company)

MENR has overall responsibility for the conservation of water resources and the prevention of pollution. It issues wastewater discharge permits. Its regional offices control and enforce discharge permit conditions. The Ministry has several water-related departments and services:

- (a) The National Geological Exploration Service, which is responsible for the regulation and control of groundwater abstraction;
- (b) The National Hydrometeorological Service, which is responsible for monitoring surface water reserves and flows (it is also the focal point for climate change);
- (c) The National Monitoring Service, which is responsible for surface water quality monitoring;
- (d) The Caspian Complex Monitoring Administration, which is responsible for monitoring the Caspian Sea's environmental status and for monitoring implementation of 2007 Presidential Decree No. 224 on Certain

Measures for Protection of the Caspian Sea from Pollution.

- (e) The Environmental Protection Department, which is responsible for verifying compliance of wastewater discharges and law enforcement (issuing of fines and claims);
- (f) The Bioresources Department, which is responsible for scientific research, monitoring, control and surveillance of the fisheries in the Caspian Sea, and increasing reproduction of species.

The Ministry of Health, through its Centre for Epidemiology and Hygiene, is responsible for setting drinking-water standards and monitoring surface waters used for abstraction of drinking water supply and for recreational purposes. There are locally based relevant divisions of the Ministry that monitor and control water quality.

The Joint Stock Company Amelioration and Water Economy is responsible for issuing water abstraction permits for surface water and for maintaining the irrigation and flood protection infrastructure. It is also responsible for imposing payments for water use.

The Joint Stock Company Azersu is responsible for management of water supply and wastewater services for all urban areas in the entire country, with the exception of the Autonomous Republic of Nakhchivan. It resulted from the recentralization of the services and the abolition of previously existing companies. As far as structure is concerned, Azersu is composed of several subsidiaries, in addition to the main company that serves the Greater Baku area on the Absheron Peninsula. Most of the areas outside Greater Baku are managed by the subsidiary Birleshmish Sukanal. In Agdash, Goychay, Ganja and Sheki, services are operated by separate subsidiary companies formed under KfW and ADB projects.

The SAWMA manages water supply and wastewater services in the Autonomous Republic of Nakhchivan.

Efficient and effective water management stems from coordination of governmental agencies, non-governmental organizations and the private sector. The existing institutional problem with water is that there is no water strategy, no clear roles are defined for the different entities managing water, and communication between the different institutions is not as fluid as required for adequate management.

Economic instruments

The major economic instruments related to water are tariffs, fines and compensations. As seen in previous sections, multilateral and bilateral grants and loans as well as the State Oil Fund are used for investment, while coverage of operating costs depends to a large extent on the State budget.

Consumers are charged for water supply and wastewater services. These tariffs were introduced after the establishment of the national water company by Presidential Decree No. 22 of 9 December 2004, which established different tariffs depending on user type: household, budget organization or industry. As seen in Chapter 5, mineral waters are charged at a rate of six manat per m³ for industries. In view of the economic situation of the population, low tariffs were set for households and the system relied on heavy cross-subsidies from industry to domestic users. Water and wastewater fees were increased in 2007. Rates for households were set at 0.14 to 0.18 (in larger cities) manat/m³ for households and 0.70 manat/m³ for the remaining consumers, and 1.2 manat/m³ for consumers who use water as a raw material.

Wastewater rates are 0.03 to 0.04 (in larger cities) manat/m³ for households and 0.20 manat/m³ for the remaining consumers. Azersu is implementing a programme of installing water meters in households

and other users connected to the grid. Reportedly, in 2009 all companies and industries connected to the grid had meters, while slightly over 50 per cent of the households connected had meters. In this way, the rate of fee collection from consumers increased in larger cities from 63.1 per cent in 2006 to 71.7 per cent in 2009. Where no water meters exist, Azersu communicates with the residential administration units, which provide the number of persons living in each house, and the charge is based on the consumption of 6 m³/person/month. According to Azersu representatives, about 80 to 85 per cent of the water is sold in larger cities; however, in secondary towns some 80 per cent of water was unaccounted for in 2006. Overall level cost recovery is insufficient to cover operating costs, and the company depends heavily on the State budget.

Regarding irrigation service fees, there was an improvement in 2007. Since then, water tariffs have been charged on the basis of consumption and not by hectare of irrigated land. In addition, there are water user associations that share operating and small maintenance costs and have the possibility to charge higher rates (set under JSCAWE supervision) to the final consumers according to these costs. However, the rates charged are still very low. JSCAWE charges water user associations 0.5 manat per 1000 m³ of water, which corresponds to a cost recovery of about 2 per cent, implying that the company depends 98 per cent on the State budget. Depending on

Table 7.4: Operating and maintenance costs, 2000-2008

	million manat								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Current expenditures for carrying out of activities on protection of water resources and their rational use	10.509	..	9.817	10.958	17.590	17.899	21.025	28.603	37.733
Expenditures for capital repair of fixed assets on treatment of sewage waters and rational use of water resources	2.155	..	0.904	1.483	1.365	1.525	1.034	2.152	1.921

Source: State Statistical Committee, 2010.

Table 7.5: Capital investments for rational use of natural resources and protection of environment

	million manat					
	2000	2005	2006	2007	2008	2009
Total	1.723	2.912	8.879	55.505	97.886	84.491
Air protection	0.826	1.504	1.602	1.092	0.930	..
Land	0.293	0.099	0.439	35.650	18.126	6.200
Water resources	0.604	1.310	6.838	1.876	78.830	78.249

Source: State Statistical Committee, 2010.

the operating and maintenance costs under their responsibility, the water user associations charge up to 3 manat per 1000 m³ – rates which do not promote the efficient use of water.

Besides tariffs and permits, the law enforcement system includes economic instruments that act as deterrents (fines) but also compensate for damage to the environment (claims). Table 2.3 shows trends with regard to the amount of fines and compensations. It can be seen that the amount of industries covered has been diminishing, which might be of concern. It is also clear that there have not been any significant changes with regard to non-compliance. Some years present a peak in the amount of fines and others a peak in the amount of claims. A comparison with the values in Table 2.3 indicates that the amount of claims and fines charged in certain years might represent 10 per cent of the amount spent on capital repair of fixed assets for treatment of sewage waters and rational use of water resources.

Table 7.5 shows the running costs and maintenance costs covered by the State as well as water-related investments. While running costs have tripled since 2000, expenditures on capital repair of fixed assets have fluctuated between 1 and 2 million manat, which can be considered a small amount. As mentioned above, quite significant investments are being made in water and sanitation as well as in irrigation, with the support of international institutions. This is reflected in table 7.6 which shows significant increases since 2006 and a jump in 2008 which coincides with the intensification of water and sanitation projects for Baku and in the provinces.

7.5 Conclusions and recommendations

Since the last EPR, there has been some progress in the water sector of Azerbaijan. However, enormous problems remain.

In some parts of the country, namely the most populated ones, adverse climatic conditions with low precipitation and high evaporation cause widespread water shortages. Moreover, the geological characteristics of large extensions of the country result in salinity of groundwater, which is exacerbated in some areas by inadequate drainage of irrigated lands. Inadequate water supply and irrigation networks cause high water losses.

Water resources are polluted owing to the lack of wastewater treatment plants in Azerbaijan and neighboring countries. Drinking water quality does not meet the required standards, and about 80 per cent of

the water used depends on the Kura and Araz Rivers, which require very costly treatment. The deteriorating water quality of these rivers is a major problem for Azerbaijan, and has to be solved together with neighboring countries. There are ongoing negotiations with Georgia, and in 2007, a Memorandum of Understanding was signed by the Ministry of Environment of Ecology and Natural Resources of Azerbaijan and the Ministry of Environment Protection and Natural Resources of Georgia, providing for the establishment of working groups with the objective of exchanging monitoring information, protecting and using transboundary waters, and developing a joint programme in this area. Although direct negotiations with Armenia cannot yet take place at the political level, initiatives by international organizations have made technical cooperation possible.

Improvements have been achieved with the creation of Azersu as the national provider of water and wastewater treatment services, and the establishment of water user associations in irrigation. However, the very low water tariffs do not allow cost recovery or promote efficient use of water.

One major problem relates to water governance. There are no structural documents on water policy and strategy, and there is limited cooperation among the stakeholders in the water sector. The roles of MENR, the Ministry of Health, and the operational management of irrigation as well as of water supply and sanitation are specified, but their interaction with the other water stakeholders, such as hydropower-generation plants, farmers associations and domestic water users, are not defined. All these stakeholders should be involved in establishing a common vision for the water sector.

Recommendation 7.1:

The Cabinet of Ministers ought to give priority to the process of approval and to foster the establishment of the State Commission on Water Issues (which draft was already submitted by MENR), including representatives of different ministries, in order to improve the water sector by defining objectives and goals in the short and medium term, and coordination between the different water actors;

The Ministry of Ecology and Natural Resources should:

- (a) *Ensure that the national policy dialogue process on integrated water resources management is used as a platform for the preparation of a water strategy based on modern water management principles such as the integrated*

river basin management principles including transboundary initiatives in order to pave the way for international cooperation especially within the Kura River basin in cooperation with various relevant water stakeholder;

- (b) *Submit this strategy for approval by the Cabinet of Ministers;*

In recent years and in the years to come, large investments are ongoing throughout the country on water treatment and wastewater networks using last-generation technology. Simultaneously, irrigation infrastructure is being improved and water user associations are being formed. Municipalities share responsibility for the protection and sustainable use of water resources. Monitoring and law enforcement structures are in place, a factor which facilitates planning and management. All these aspects have the potential to significantly improve the water sector nationwide. However, given the current capacity and institutional setting, there is a risk that these efforts might not materialize fully.

In order to maximize the results to be achieved using the infrastructure and equipment that are becoming available, there is a need over time for increased planning and increased communication between stakeholders at the local level, which can be achieved by developing and implementing water basin management plans, as well as increasing the capacity of all operators for adequate and efficient operation and equipment maintenance and enhancing management skills.

Recommendation 7.2:

The Ministry of Ecology and Natural Resources should:

- (a) *Establish within the Ministry a water department (or division), which should:*
- (i) *Revise the Water Code and regulations in order to incorporate the river basin management approach and to increase the harmonization of the water legal framework with the EU water framework directive;*
 - (ii) *Coordinate the elaboration of the river basin management plans to be developed by the regional agencies with the participation of the stakeholders;*
 - (iii) *Create mechanisms for dialogue between the different water stakeholders;*
 - (iv) *Create a system for monitoring the implementation of the management plans and strengthen the relevant enforcement mechanisms on water-related issues;*

- (v) *Create the conditions for capacity-building of the different water stakeholders (central and regional MENR staff, Azeru and the Joint Stock Company Irrigation and Water Economy and subsidiary companies staff, municipalities, water users, etc.) and increase their knowledge on technical issues, management and planning skills;*

- (b) *Reinforce the regional agencies with water experts.*

The legal framework for water in Azerbaijan has not kept up with the existing institutional infrastructure that is being developed. While the construction follows mostly EU standards, the SNIP norms (from Soviet times) are still part of legislation. These norms require water storage and transmission capacity that is much higher and costly than Western standards. Present norms for wastewater treatment are unrealistic and much more stringent than international standards. It is commonly accepted that the new systems are not being designed to comply with the existing norms, but there is a need to ensure that they comply with internationally accepted norms. Furthermore, legislation in force requires the monitoring of an unrealistic high number of parameters, while at the same time only about one-third of the EU priority substances are covered by the list. It is not possible for the monitoring services to measure all the parameters, and it is not possible for the existing laboratories to determine some parameters with the required precision. The cost implications involved in monitoring and analyzing a wide range parameters are severe.

There is a need to reform water legislation to adapt it to the reality of the country and internationally accepted good practices (there are ongoing projects for convergence with EU legislation which is positive).

Recommendation 7.3:

- (a) *The Ministry of Health, in cooperation with the Ministry of Ecology and Natural Resources and the State Commission on Standards, should proceed with the revision of norms and standards already started, and make sure all water types and uses are taken into account, and that the defined norms and standards are practical and economically feasible, while still complying with best practices worldwide (WHO, EU, etc)*
- (b) *The Ministry of Ecology and Natural Resources should ensure that while the above is not achieved, the water and sanitation systems being built comply with international standards.*

In Azerbaijan, water resources are not well distributed, which is an obstacle for farming, while at the same time

the problem of water losses is far from being solved. Whereas in the past farming was organized collectively, at present irrigation water needs tend to increase since each farmer plants independently different crops with different water needs. One of the root problems is infrastructure, already mentioned above, but there are other causes that need to be addressed as well. Water tariffs are still highly subsidized, hindering efficient water use; water reuse is not promoted; and the installation of water meters is proceeding at a very slow pace. Water user associations require further capacity, and in some cases more responsibilities and joint work with the public sector.

Recommendation 7.4:

- (a) *The Ministry of Ecology and Natural Resource, the Amelioration and Water Economy joint stock company, and Azersu should propose water tariffs that promote the efficient use of water and propose economic instruments to grant access to water for less well-off people. These tariffs should also allow for a full cost recovery to be applied in the maintenance of the systems;*
- (b) *The Ministry of Ecology and Natural Resources and the Amelioration and Water Economy joint stock company should carry out a study to assess major hotspots of water losses throughout the country, assess the ways to reduce water needs (this would probably need incentives to change from some crops in some areas), and prepare a plan of action with short-term and medium-term components according to priorities - the implementation of the plan should include the participation of water user associations;*
- (c) *The Ministry of Ecology and Natural Resources and the Amelioration and Water Management joint stock company should prepare awareness-raising campaigns for water users associations and end users to promote adequate planning of water utilization along the channels and sub-channels and culture of shared maintenance responsibilities;*
- (d) *Azersu and other existing water utilities should install water meters so that they can charge for their services on the basis of actual consumption;*
- (e) *The Ministry of Ecology and Natural Resources, Azersu and other water utilities should launch awareness-building campaigns to encourage water conservation in home installations and enterprises and for users to repair leakages inside their premises – a project should be devised by MENR and Azersu to address this last issue.*

* * * * *

Those following parts of recommendations from the first EPR of Azerbaijan that are still valid and their preceding conclusions are listed below.

The water sector of Azerbaijan faces enormous problems. Adverse climatic conditions with low precipitation and high evaporation cause widespread water shortages. Poor-quality water-supply and irrigation networks cause very high losses. Payment systems are not based on actual water use and therefore give no incentive to save water. Water resources are polluted owing to the lack of waste-water treatment plants in Azerbaijan and neighbouring countries. The quality of drinking water does not meet the required standards. Owing to inflation, economic instruments such as abstraction charges and user fees have become meaningless.

The Government of Azerbaijan has taken a number of steps to reverse this negative situation. The most recent of these is the National Programme on Environmentally Sustainable Socio-economic Development launched in February 2003. It includes a number of specific actions aimed at improving the situation before 2010. The following recommendations in most cases coincide with the Government's plans and should therefore be considered as support to its efforts.

Many of the problems mentioned above are related to the lack of efficient cooperation among the stakeholders in the water sector. The creation of the Ministry of Ecology and Natural Resources was a clear improvement in this respect. The State Committee of Amelioration and Water Management focuses on water regulation and irrigation. The water-supply interests are defended by the Absheron Regional Water Company and the State Committee of Architecture and Construction. Waste-water management involves a number of entities: Baku and Sumgayit executive powers, the State Committee of Architecture and Construction and industries. Others with an interest in water include: hydropower-generation plants, farmers' associations and domestic water users. All these stakeholders should be involved in establishing a common vision for the water sector. The basis should be a river basin approach rather than an administrative, territorial approach.

The deteriorating water quality of the Kura river is a major problem for Azerbaijan. It cannot be solved without involving Armenia and Georgia. Although multilateral negotiations cannot take place at the political level at present, initiatives by

international organizations have made technical cooperation possible. This will be very important for the preparation of political discussions once this will again be possible.

EPR I - Recommendation 7.1:

The Ministry of Ecology and Natural Resources and the State Committee of Amelioration and Water Management should coordinate the development of a national strategy for the water sector based on the integrated river basin management principle. Such a strategy should also be agreed upon by other stakeholders.

Transboundary initiatives are encouraged in order to pave the way for international cooperation especially within the Kura river basin.

Although most of the legal framework was updated after independence, a number of regulations and norms from the previous system still apply. Some of these are inexpedient in a system where resources, e.g.

energy, are charged at cost. The SNIP norms lead to an excessive use of resources: the per capita consumption rates are at least 100% higher than western standards and so are the system requirements for water storage and transmission capacity. The present norms for waste-water treatment are unrealistic and much higher than international standards, i.e. Azerbaijan requires maximum 6 mg BOD/l compared to the EU standards of 25 mg/l.

Charges for the abstraction of water have not been adjusted since 1993. Due to the high inflation in the mid-1990s, the charges have lost their real value and the money is no longer collected. The intentions behind the system of promoting the efficient use of resources and at the same time financing water management and monitoring activities are thus not fulfilled.

EPR I - Recommendation 7.4:

(b) Water-user charges should be increased to account for inflation

Chapter 8

WASTE MANAGEMENT

8.1 Current situation

Azerbaijan still faces challenges in its efforts to achieve efficient waste management. Nevertheless, the Government has made waste management one of its priorities. Since Azerbaijan acceded to the Basel Convention²³ in 2001, the legislative framework was widened from a single act to several legislative norms. Actions needed to improve the waste management situation were included in the Comprehensive Action Plan for Improving the Environmental Situation (CAPIES) in Azerbaijan for 2006–2010.

The system of municipal solid waste (MSW) collection, transportation and disposal works well in Baku City, and disposal practices have been significantly improved by concentrating waste at a single disposal site, which receives some 80 per cent of municipal solid waste collected on the Absheron peninsula, as well as upgrading operations. In general, however, existing landfills do not meet international sanitary standards. Waste separation is starting to be introduced. Rural areas are only partly covered by municipal waste service.

Outdated technologies are continuously being replaced with modern ones, reducing industrial waste generation. CAPIES implementation in the period 2006–2010 has strongly reduced the amount of accumulated waste. Oil and gas industries have upgraded their waste management practices, also under the influence of British Petroleum (BP).

Facilities for the storage of obsolete pesticides and for radioactive waste have been rehabilitated, and measures implemented have significantly reduced environmental risks at these sites. A medical waste legislative and strategic framework has been defined and several private ambulances now incinerate their waste, but the public health sector has yet to introduce proper management of medical waste. Sites polluted by past exploration and exploitation of oil and gas along the coast of the Caspian Sea and nearby land, especially on the Absheron peninsula, have been

investigated and mapped, and clean-up efforts have already begun at several sites.

The Government has made a great effort to improve the waste management situation. Steps taken have significantly reduced environmental pollution from waste.

Municipal solid waste

MSW management in Azerbaijan is receiving much more attention than previously. Most development occurs in the area of Greater Baku and on the Absheron peninsula, where some 40 per cent of the country's population live, but the application of MSW management to other regions is only envisaged in future projects.

The latest estimates on waste in Baku indicate generation of approximately a million ton per year. This is, however, only an expert estimate based on the number of vehicles delivering waste to disposal sites, so the reliability of these data is low. Estimates for MSW generation for the country as a whole are shown in table 8.1. The strong increase in MSW generation in recent years is most likely due to improved monitoring of vehicles delivering waste to the Balakhani disposal site than to an actual rise in MSW.

Separation and recycling of municipal waste by citizens had not started by the time of the EPR review as a formal, widespread programme. However, there are agents who buy waste paper, plastic and metals from individuals. At the current stage, a basic waste management infrastructure for recycling is being developed. In addition, a waste paper processing plant, Sumgait Carton, developed by Azersun in 2009 is able to produce up to 50,000 tons of paper annually. Similarly, the country has capacity for processing waste glass and scrap metal, which creates a solid base for the introduction of nationwide recycling programmes.

The major change in Baku was the creation of the Tamiz Shahar (Clean City) Joint Stock Company (JSC), responsible for the long-distance transport (from 30 to 100 km from the landfill), sorting and

²³ Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal



Separate collection of municipal solid waste in Baku

Table 8.1: Estimate of household waste generation, 2000–2009

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimated volume	4.6	5.3	7.7	7.9	7.4	7.3	6.6	6.8	6.2	9.3

million m³

Source: Ministry of Ecology and Environmental Resources, 2010.

Table 8.2: Disposal of waste in Baku

Location	Operated since	Total allocated area (ha)	Used area (ha)	Estimate on disposed volumes (m ³ /year)	Note
Balakhani	1963	200.0	27.0	2,200.0	in operation
Azizbeyov	1980	5.0	1.8	..	Closed
Surakhani	1994	2.5	0.4	..	Closed
Garadagh	1994	25.0	3.0	60.0	Will close after development of transfer station

Source: Environmental Impact Assessment of the Balakhani disposal site Curry & Brown International Ltd, 2008. Tamiz Shahar JSC 2010.

disposal of municipal waste from the area of Greater Baku. Tamiz Shahar JSC started its activities with public campaigns and an inventory of dumps currently located in the Baku area as well as an upgrade of the Balakhani disposal site, which was selected as the central and sole place for the disposal of MSW generated in Baku and in the future for the entire Absheron peninsula.

Public campaigns of Tamiz Shahar JSC include a children's painting competition, beach clean-ups and

the introduction of separate collection (dry/wet waste) in the Old Town of Baku and in other parts of the capital city. The new containers are clearly labelled and waste is regularly collected by specialized vehicles. However, in cases when all waste is collected in a single vehicle, this discourages people to separate waste properly. Also, the start of operations of Tamiz Shahar JSC was broadly publicized in the local press and on the Internet, and a meeting with NGOs was held at the Balakhani disposal site.



Balakhani disposal site before and after clean-up



The inventory of waste disposal sites in the Baku area lists 40 sites larger than 100 m² and 100 sites of smaller dimensions. Total land area affected by the dumping of waste is estimated at nearly 450 ha. The largest sites include Azizbeyov, Balakhani, Garadagh and Surakhani (Table 8.2). These sites were created or appeared in the past when the city management did not have the technical and financial resources to ensure concentration of MSW at a single disposal site, and their permanent use was not envisaged.

The inventory is used not only to plan future clean-up action but also to identify locations for future transfer stations. In addition, this inventory will improve inspection of current disposal practices and significantly limit uncontrolled dumping. The clean-up and remedy of these sites have not yet begun, as all efforts are concentrated on improving the central site at Balakhani.

The rehabilitation of the Balakhani disposal site started with the extinction of fires on site and the relocation and covering of waste by inert material, which also decreased the area occupied by waste. Currently, the fencing of the site is being completed, allowing full control of access to the site and monitoring of incoming vehicles. This is the basic precondition for starting to record the waste amounts delivered to the site and obtaining accurate data on MSW waste amounts, which was not possible until now.

This process is supported by the World Bank under the Integrated Solid Waste Management Project (ISWM), which is part of the Absheron Rehabilitation Programme II (ARP II). The ISWM project started in 2009 and provides assistance and financing for the rehabilitation and management of the Balakhani disposal site, including controlling environmental

impact, increasing the efficiency of existing landfill, purchasing modern waste collection equipment and technology (weigh bridges, bulldozers) and engaging in construction works (fencing, burying of waste and laying of internal roads). In parallel with the rehabilitation and improvement activities at the Balakhani disposal site, preparatory activities for its closure in future will be conducted. What is more, the closure and rehabilitation of other disposal sites on the Absheron peninsula will be financed by this project.

The total amount of the project budget planned for five years is US\$ 41.5 million. The World Bank has lent US\$ 29 million for the project, which is to be provided through the International Reconstruction and Development Agency, with the balance to be contributed by the Azerbaijani Government.

The Environmental Impact Assessment for the Balakhani disposal site was performed in February 2008 according to World Bank standards. Public hearings were conducted and the comments were taken into consideration. The EIA reported that the area suffered from the long-term negative impact of oil-extracting and waste disposal activities, was extremely polluted and required urgent remediation. There are no historic records on pollution for this site, but the EIA report characterized the environmental status prior to rehabilitation works.

The spread of fumes from waste incineration at the Balakhani waste site and nearby illegal dumps on adjacent territory can be visually observed. Groundwater pollution was not identified, as there are no underground water strata. Surface water samples taken from the shore of Boyuk Shor Lake and from a water body that has currently lost water contact with the lake indicate BOD in the range of 6 – 50 mg/l

and COD around 170 – 2690 mg/l. Analysis of hydrocarbons (GHC), polyaromatic hydrocarbons (PH) permanent organic components (POC) and volatile organic components (VOC) resulted in characterization of surface waters as “extremely contaminated” and further as “catastrophic ecological conditions” in one of the water sampling points. Soil samples indicate concentrations of heavy metals (Co, Ni, Zn) exceeding standards 1.5 – 11 times in the topsoil. Tests from boreholes indicate that heavy metals were transported to deeper soil horizons, e.g. in the 9-10 m depth concentration is nearly 50 per cent higher than in the 1 m depth. Generally, the entire area is described as having lost its ecological sensitivity and its value as a habitat for wildlife, due to contamination from industrial pollution and extreme exposure to the impact of human activity. However, this conclusion is not based solely on the disposal activities in the area; rather, it is the result of a combined impact, including oil exploration, waste water discharge and various other industrial activities.

Additionally, a draft resettlement policy framework was formulated for several IDP²⁴ families living permanently at the disposal site and 200–300 waste pickers who come to the site daily and earn some income from collecting and recycling different types of waste.

The agreement on the future development of waste management facilities was reached and resulted in the start of development of the MSW incinerator at Balakhani. The total cost is € 346 million and the agreed operating period is 20 years. The Balakhani Waste-to-Energy Plant will consist of two lines with a capacity of 250,000 tons per line and two turbines producing electricity estimated at 231.5 million kWh per year. There is also a plan to develop an MSW separation plan with a capacity of 200,000 t/y. The remaining waste will be disposed of at a landfill. The plant will operate in compliance with EU and Azerbaijani environmental requirements. Emission levels at the plant will be monitored on a daily basis.

The fleet of collection vehicles used in Baku was already partially modernized in 2007, and additional equipment will be acquired under ARP II. Individual home owners are responsible for equipping individual buildings, but many of them underestimate the number of containers, creating problems in terms of MSW collection. This problem remains very sensitive, especially in relation to the ongoing massive housing development.

The two private companies, UP Azerbaijan and Kasko, each serve one district of Baku. These companies have played an important role by introducing new standards in MSW collection in the city in the past, but currently the modernization of the collection fleet and the founding of Tamiz Shahar JSC are limiting their further expansion.

There is little information available on the management of MSW in other towns outside of Absheron peninsula. The disposal site at Sumgayit was upgraded and fenced, and MSW collection has been improved by the introduction of new vehicles and collection bins. The NGO Hayat, with the support of Practical Action Consulting, visited the towns of Tovuz (pop. 13,500) and Yevlakh (pop. 67,000) in 2006 to promote sustainable waste management. The published study estimates that 60 tons per day are disposed of in Yevlakh and 40 tons per day in Tovuz at their respective disposal sites, and provides recommendations for improvements. Additionally, some waste is disposed of at a number of smaller dumps around these towns. The local waste collection systems are unable to provide a reliable and regular collection service.

Future plans for MSW management include the development of several recycling plants in the Baku area, the preparation of a long-term strategy for the new Tamiz Shahar JSC, and the closure of the current disposal site. It is also expected that a MSW disposal site will be established in the Gobustan and Shamakhi areas.

The overall picture with regard to MSW management on the Absheron peninsula shows that correct decisions have been made and concrete steps are being taken to achieve a significant improvement in MSW management. The Integrated Solid Waste Management Project (World Bank) is targeting the development of a new waste management strategy and the supply of the necessary equipment (collection vehicles and containers) for Greater Baku.

The division of responsibilities between Baku City (collection) and Tamiz Shahar JSC (sorting and disposal) has created a situation with clear responsibilities and the potential to develop a sound business relationship between the town and MSW facilities in the future. The current rate for MSW services, set at 0.14 manat per person per year, will not suffice to cover the operational costs of the new facilities.

²⁴ Internally displaced persons

Industrial and hazardous waste

Industrial waste management was neglected as a result of the legacy of old pollution and outdated technologies. A significant improvement has been achieved in defining priorities, strengthening the legislative framework, formulating a plan of action and cleaning up polluted territories. The number of activities is significant, and a detailed description exceeds the scope of this report. Thus, this section provides general information on recent general developments in the industrial waste management section, and specific waste streams are discussed in the following sections.

The Government is focusing in its activities on hazardous waste, by introducing new legislation and reporting for hazardous waste based on Basel Convention principles. The State Statistical Committee has published the following information on the generation, reuse and disposal of hazardous waste:

The area of Sumgayit, the centre of the country's chemical industries, is undergoing similar changes. The most critical problem, namely mercury sludge from chlorine production, was solved by the development of a hazardous waste landfill.

The National Centre for Hazardous Waste Management was developed as part of the Urgent Environmental Investment Project, with financing from the World Bank in full compliance with EU regulations for hazardous waste landfills. The site was built by the

Italian company RENCO, in cooperation with Azeri subcontractors. Design and construction supervision was undertaken by the UK firms Currie & Brown Ltd and CQA International Ltd. The landfill cell has a volume of 250,000 m³, and 105,000 m³ have already been used for the disposal of mercury contaminated soil and sludge from Sumgayit. The remaining space is available for commercial waste disposal. The Centre has been in operation since July 2004. Currently, BP has developed there a new cell for disposal of its non-hazardous waste.

The State Statistical Committee collects information on hazardous waste, but the data structure is not compliant with the recently approved waste classification (tables 8.4 and 8.5).

Additional information on the generation of hazardous waste can be obtained from the reports of the Ministry of Ecology and Natural Resources to the Secretariat of Basel Convention.

There is little specific information on industrial waste in other industrial centres of Azerbaijan, and the quality of the published data is questionable. Nor is there any explanation of annual or regional variations in generation and reuse. For example, hazardous waste in Sumgayit increased year on year by more than 800 per cent in 2003 (from 2,500 to 20,100 tons) and more than 500 per cent in 2006 (from 3,900 to 21,500 tons). The first reason identified is that data are summarized and published without verification. Second, the Statistical Committee collects data according to the old classification system, which

Table 8.3: Estimated generation, use and disposal of hazardous waste, 2000–2008

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Generation	26,600	..	9,800	26,900	11,200	12,800	29,500	10,400	24,300
Re-use	11,400	..	700	1,400	3,800	4,900	3,300	4,900	4,700
Disposal	..	..	1,000	9,700	1,000	40	26,000	1,200	8,600

Source: State Statistical Committee, 2009.

Table 8.4: Estimated generation of hazardous waste, 2000–2008

City	2000	2001	2002	2003	2004	2005	2006	2007	2008
Baku	21,300	..	7,200	6,400	5,200	8,400	7,300	8,400	22,300
Ganja	100	..	..	..	200	200	500	..	..
Mingechevir	6	..	4	3	4	3	2	2	1
Sumgayit	4,900	..	2,500	20,100	5,800	3,900	21,500	1,300	1,500

Source: State Statistical Committee, 2009.

Table 8.5: Estimated reuse of hazardous waste, 2000–2008

City	ton/year								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Baku	10,400	..	600	900	1,600	2,500	2,600	48,500	3,700
Ganja	..	..	..	..	..	..	..	..	..
Mingechevir	..	..	..	..	..	..	..	..	..
Sumgayit	1,000	..	30	400	2,200	2,100	600	40	40

Source: State Statistical Committee, 2009.

does not correspond to the Basel Convention or EU standards. Thus, reliable information on actual industrial generation will be collected only after the introduction of weighbridges at disposal sites and full implementation of the new waste classification system.

As can be seen from the numbers published, the most information on hazardous waste is collected on the Absheron peninsula, but the information from other regions seems to be incomplete. What is more, the published statistical data do not include waste resulting from activities of foreign companies operating in the country (compare tables 8.3 and 8.8). Centers of industrial activities, such as Ganja, Mingechevir and Shirvan, generate significant amounts of industrial non-hazardous and hazardous waste, but concrete information is lacking.

Medical waste

Medical waste remains a problem for Azerbaijan. There has been some improvement, especially as regard the management of this waste in the private health sector, where several clinics and ambulances in Baku use incinerators as a disposal option. No changes have been identified in the practices of the State-owned health sector. No concrete local evidence about the harmful impact of this practice was found, but international experience provides relevant examples of the spread of disease, infection and direct injuries from sharps related to this practice.

However, significant changes have occurred. New legislation has been adopted and a strategy for health-care management has been drafted and is supported by all involved ministries (Policies and strategies section).

Those operating the MSW incinerator at Balakhani are already considering reserving capacity of 10,000 tons per year for the incineration of medical waste. This would considerably improve medical waste management and reduce environmental and health risks resulting from the current practice.

Radioactive waste

Radioactive waste is managed by the Baku Radioactive Waste Site Izotop Industrial Complex (IIC) located at Pirekeshkyul since 1963. The site was significantly upgraded from 1998 onwards to achieve compliance with international standards. It specializes in the long-term storage of all types of radioactive waste generated in the country. IIC's additional activities include:

- Transport of radioactive materials, including radioactive waste
- Radiochemical analyses
- Radiation monitoring (both identification of radiation sources and environmental monitoring)
- Treatment of radioactive waste before storage (packaging, conditioning, compacting)
- Maintaining inventory of radioactive waste disposed at on site
- Emergency planning and response

The upgrade of the IIC site was financed by several international assistance projects, including Technical Aid to the Commonwealth of Independent States (TACIS) and the United States Department of Energy. Improvement on-site includes new long-term storage cells, a radioactive waste treatment unit and the modernization of laboratory equipment. IIC is also responsible for other radioactive waste, which is not located on site. This includes iodine plants in Surakhani, Ramany and Nefchalinsky sites.

The inventory of radioactive waste is rather detailed and includes several levels of information. On the national level, some 9,200 sealed radioactive sources of low- and medium-level radiation have been identified.

Additionally, contamination by naturally occurring radionuclides was identified in 155,000 tons of soil polluted by oil extraction and in 200,000 tons of activated charcoal and polluted soils in iodine plants in Nefchalinsky, Ramany and Surakhani.

With regard to ICC radioactive waste stored on site, complete records have been kept since 1963.

Table 8.6: Estimated data on radioactive wastes

Waste type	Source	Radionuclides	Total radio-activity	Estimated amount (t)
Sealed radioactive sources	Medicine	^{60}Co , ^{90}Sr , ^{137}Cs	520	10
Sealed radioactive sources	Calibration of dosimetric and survey devices	^{60}Co , ^{90}Sr , ^{137}Cs	112	10
Radium needles and salts	Medicine	^{226}Ra	>36 mg	
Various gauges, radiography devices, equipment, sealed radioactive sources	Industry	^{60}Co , ^{90}Sr , ^{137}Cs , ^{238}Pu	47	100

Source: Upgrading the Radioactive Management Infrastructure in Azerbaijan, 2007.

Table 8.7: Legacy storage cells

Type of waste	Ton
Radionuclides	718
Contaminated meat	724
Biological research waste	678

Source: Upgrading the Radioactive Management Infrastructure in Azerbaijan, 2007.

These were converted into electronic format in 2009, significantly improving access to information, reporting and response to requests on stored waste.

The legacy storage cells, which contain radioactive waste disposed of prior to the modernization of the ICC, contain the following radioactive waste:

Azerbaijan relies on a system of registering radioactive materials from the moment of import to the moment of disposal, which helps to minimize the risk of accidents related to radioactive waste in the future. Import of radioactive materials is subject to permit issuing on several levels. First, the State Agency for Radioactive and Nuclear Activities must agree with the import, then the relevant ministry reviews the application, and if no objections are raised, the import permission is finally approved by the Cabinet of Ministers. This also ensures distribution of full information on the import to all ministries involved in radioactive materials and waste supervision.

The iodine plant in Surakhani was investigated in detail, improving the information of the amount of activated charcoal and polluted soil disposed in the vicinity of the Izotop Industrial Complex (IIC) for permanent storage. The level of on-site works depends on a decision regarding future land use, which has not yet been taken. However, the IIC has prepared several scenarios on activities and equipment needed

to achieve the required standards for Surakhani area clean-up, and work can begin once a decision on land use has been made.

The flow of information to the local population with the cooperation of local NGOs in the area of iodine plants has improved, significantly decreasing the risk of accidental pollution by radiation and putting a halt to cases involving local population using polluted charcoal for heating.

Naturally occurring radionuclides, mainly radon, also occur from oil extraction. They are contained in water pumped out with oil, and this water is accumulated in lagoons where these sediment and concentrate. The sediment samples indicate radioactivity of 1,000 – 2,000 Bq/l, while natural radioactivity of clean soil is 35 Bq/l. Because water acts as a natural barrier to radioactivity, this type of pollution becomes a problem if these lagoons are dried.

Azerbaijan plans to conduct an additional inventory of radioactive sources, with a focus on past Russian military bases and abandoned industrial facilities.

Oil drilling

The current operations of the State Oil Company of Azerbaijan Republic (SOCAR) generate a wide variety of wastes, including drilling mud, oil-contaminated

soil, waste oil, tires, formation water, and solid waste such as plastics, wood, and electronic components. In addition, oil-contaminated soils exist in a great number of locations throughout the Absheron peninsula, which SOCAR plans to remediate. Currently, SOCAR manages a single 45,000 m³ disposal facility in Garadagh District that commenced operations in 1985, for the final disposal of a portion of the oil-contaminated soils from remediation and from drilling activities. This six-cell landfill, however, has structural flaws (e.g. cracks in the concrete liner) and needs to be replaced. Along with the need to dispose of waste generated from ongoing remediation efforts, one of SOCAR's highest priorities is establishing a new waste management facility or upgrading the existing facility that will process waste from SOCAR operations (past and present) as well as from its approximately 120 subsidiaries. A feasibility study evaluating the technical, economic, and financial viability of the development of a waste management facility or the upgrading of the existing waste management facility will be carried out and provide suggestions for the design, construction and operation of the facility. This study is supported by the United States Trade and Development Agency with a US\$ 572,068 grant. The winner of the tender, M-I SWACO, was announced in March 2010.

Sludge from current oil drilling is partially discharged into the sea (water-based drill fluid), reinjected offshore or transported to land for processing and disposal (synthetic-based drill fluid). The share of drill cuttings transported to land is growing, reflecting improved environmental practice. However, the amount of drill cuttings depends on the need for oil exploration works. Table 8.8 illustrates the drill cuttings from BP Azerbaijan, the largest foreign investor in the oil sector.

BP is using the following facilities to manage its drill cuttings and waste:

- (a) Serenja Hazardous Waste Management Facility, where the drill cuttings are received, stored temporarily, and treated by Indirect Thermal Desorption (ITD) and by bioremediation;

- (b) Sumgayit – Tahlükəli Tullantılar MMC (Hazardous Waste Ltd) facility non-hazardous waste cell;
- (c) Lokbatan – Central Waste Accumulation Site.

BP waste management activities are important in Azerbaijan because they support the development of the network of specialized companies, which can also be used by Azerbaijani enterprises. The development of waste management facilities and operation practices also provides a good example of the application of international waste management standards.

Contaminated sites

The State Oil Company of Azerbaijan Republic (SOCAR) has accepted responsibility for old oil pollution and is taking concrete actions to identify and clean up polluted territories. Its Ecological Department, founded in 2006, plays a major role in planning, performing, coordination and monitoring such measures. This department performed detailed mapping of oil-polluted territories on the Absheron peninsula and published the Atlas of Pollution in Absheron in 2009, creating a broad database of information for planning clean-up activities. The total area polluted by oil is estimated at 10,000 ha.

Clean-up of highly polluted soil is performed by mechanical methods on the mine spoil soil at Ramana settlement with a capacity of 20 m³/h, with the cleaned soil then returned to its original place. Bioremediation is used for less polluted soil. Approximately 300 ha of land in 2009 was remediated by a combination of these methods, and it is expected that 400 ha will be cleaned in 2010.

The largest recent project is the clean-up and remediation of Bibi Heybat, which was previously used as an oil storage area in open tanks. The company EKOL Engineering Services started clean-up works in May 2008, and by now more than 11 ha of land have been remediated and more than 18,124 m³ of liquid oily waste have been sent for treatment.

Table 8.8: BP Azerbaijan drill cuttings, 2005–2008

	2005	2006	2007	2008
Discharged to the sea	13,014	15,811	23,995	9,397
Transported to land	15,051	17,650	23,010	24,782
Treated by ITD	14,298	13,391	14,922	16,884

Source: BP Azerbaijan Sustainability Reports 2005–2008.



Bibiheybat site before and after remediation



The World Bank recently closed two components of the Absheron Rehabilitation Programme (ARP I and ARP III), which were aimed at cleaning up polluted land. This is in fact a positive sign that the Azerbaijan authorities are shifting from investment-oriented assistance toward technical assistance aimed at the transfer of foreign environmental expertise with a view to further developing capacity for solving environmental problems in Azerbaijan.

Pesticides

Pesticides have been a heavy environmental burden in Azerbaijan. The establishment of the Phytosanitary Control Service in 2006 created conditions for taking concrete steps to solve this problem.

The last two inventories of pesticide waste were performed in Azerbaijan in 2006 and 2007, covering pesticides in smaller storage facilities in various parts of Azerbaijan, except for Jangi storage facility. The next

inventory is planned for 2010, and is to be conducted in accordance with the Stockholm Convention on Persistent Organic Pollutants with a view to ensuring improved reporting quality. The 2007 inventory identifies 2,790 tons of obsolete pesticides, of which 392 tons of liquid pesticides. About 2,500 tons of obsolete pesticides were repacked and redispensed of. Additionally, 2,350 tons of soil polluted by pesticides were identified.

Apart from the above, the central facility for obsolete pesticides at Jangi (Gobustan) stores approximately 6,000-7,000 tons of obsolete pesticides. In 1998, the organization responsible, Azerbaijan Selkhozkhimiya, was abolished and this central facility, together with some 80 storage facilities, remained without any supervision. This loss of supervision led to scavenging at this site by the local population. Pesticides taken from the site were used by farmers and concrete blocks were employed as construction material, a practice that was connected to significant health risks.



Jangi pesticide site before and after clean-up



Responsibility for obsolete pesticides storage and the central site was assigned to the Phytosanitary Control Service in 2006.

The central site was completely restored and upgraded with an investment of 400,000 manat. Pesticides were repacked and placed in concrete bunkers and covered with concrete cover blocks. The site is now fenced, guarded, and a new access road was built.

Information on the use of pesticides is reported quarterly to the State Statistical Committee.

Currently, the main unsolved problem related to obsolete pesticides is identification of a suitable destruction method for nearly 400 t of liquid pesticides, as the country does not have appropriate specialized facilities for their destruction. At present, long-term storage is deemed the only option.

According to the director of the Phytosanitary Control Service, currently traded pesticides are a bigger problem than obsolete pesticides from the past. There is a need to develop a system ensuring the return of unused pesticides and packaging used for pesticides distribution.

8.2 Policies and strategies

Although Azerbaijan has not officially adopted a general waste management strategy, several documents provide guidance with regard to activities and targets in waste management. Waste management targets were included in the 2003 National Programme on Environmentally Sustainable Socioeconomic Development, prepared by the Ministry of Ecology and Natural Resources. The action programme addresses, inter alia, the urgent need to improve industrial and municipal waste management, including through the construction of landfills that meet health and environmental standards.

The following measures were planned in this document:

- (a) Creation of a new landfill for hazardous industrial waste
- (b) Use of advanced practices for sorting, disposal and recycling of household waste
- (c) Introduction of appropriate methods for the generation of biogas from municipal waste
- (d) Construction of waste incinerators for the generation of energy and compost from waste

The new landfill for hazardous waste was already put in operation and is open for commercial operation. The construction of the MSW incinerator has already

started, and management of MSW is being improved. Biogas utilization has not yet begun.

Although the current development of waste management infrastructure will result in significant changes and large sums have been allocated for its development, the strategy and policy on financing its operation are not sufficiently clear. The waste fees of 0.14 manat/person/month paid by the population and 8.40 manat/m³ paid by commerce and industry for MSW collection and disposal do not seem to be adequate to cover operation of a waste incinerator and planned recycling facilities. These fees are below the international average for fees paid for a similar level of waste management service. Adapting these fees to reflect the real costs of waste management infrastructure operation would allow stable and sustainable services for the population and industry.

More recent actions for improving the waste management situation were further specified in the Comprehensive Action Plan for Improving the Environmental Situation in Azerbaijan for the period 2006–2010. This action plan is in the final stage of implementation, and a new action plan for the period 2010–2014 is in the final stage of approval.

The key document for improving the management of industrial waste is the Strategy for Hazardous Waste Management, which was adopted via Resolution No. 117 of the Cabinet of Ministers (2004). The Strategy defines the objectives of managing hazardous waste in Azerbaijan and incorporating Basel Convention requirements into national legislation. The Strategy is in line with international standards and defines:

- (a) Actions required for its implementation
- (b) Requirements to monitor its implementation
- (c) The need to develop a detailed implementation plan for the strategy

The main purpose of the 2004 Strategy is to provide a policy and decision-making framework for the environmentally sound management of hazardous waste. The Strategy would establish a system for the collection, treatment, recycling and disposal of hazardous waste according to international practice and standards.

The Strategy addresses both legal and institutional issues, human resources and capacities for implementation, public awareness-building and waste reduction and recycling. It also includes key international principles for sustainable development and hazardous waste management.

The Strategy for Hazardous Waste Management, together with the implementation of the Basel Convention in Azerbaijan, creates a solid base for further approximation of hazardous waste management to the EU legislative framework in this area. One of the important issues is the change in terminology. The old term “toxic waste” has been replaced by the term “hazardous waste”. Also, adoption of a new waste classification system based on the Basel Convention and the chemical properties of waste is designed to replace the former waste classification based on four hazard classes.

The recent legislation on medical waste is backed by a management strategy developed in cooperation with the World Health Organization (WHO), which presents a plan of actions needed to successfully implement the legislation. This strategy, according to the information from the Ministry of Health, has been positively received by all ministries concerned and will be implemented as soon as key health-sector personnel have received appropriate training.

No radioactive waste strategy has been drafted, but existing legislation and assignment of responsibilities form a system of effective control over radioactive waste.

Two municipal waste management strategies were prepared for Baku and Absheron peninsula with the aid of foreign donors:

- (a) Integrated Management Plan for Municipal Waste for Baku City
- (b) Waste Management Strategy for Absheron Peninsula

Although they were not formally adopted as national strategies, recommendations formulated therein are already being implemented through the Comprehensive Action Plan for Improving the Environmental Situation in Azerbaijan for 2006–2010

These two strategies will be further developed in more detail by the implementation of the Strategic and Sector Restructuring Plan for Solid Waste Management in the Greater Baku area, which is now in the tender evaluation phase.

8.3 Legal framework

The Law on Industrial and Household Waste was amended in 2007. This framework law defines State policy for protecting the environment from industrial and municipal waste, establishes the responsibilities of State organizations, and sets reporting requirements. It

also spells out the responsibility of waste generators and fixes requirements concerning waste reuse and recycling, transportation, treatment and disposal. The Law is supported by several legislative norms adopted in the period 2003–2008, which provide further details on hazardous waste management.

The need to collect information on industrial and hazardous waste is defined in Resolution No. 41 of the Cabinet of Ministers dated 31 March 2003 on passportization of hazardous waste and in Resolution No. 13 of the Cabinet of Ministers dated 25 January 2008 on Rules for the Inventory of Industrial Waste. While passportization requires preparation of one-time audits of hazardous waste generation aimed at identification of key waste streams, the inventory focuses on introduction of a new classification system for industrial waste and regular reporting of quantities of hazardous waste generated. These two resolutions are used together, ensuring that waste passports are prepared in a uniform way. Additionally, a new form for reporting hazardous waste was agreed with the State Statistical Committee in 2005.

The requirements of the framework act on municipal solid waste management are defined in more detail in Resolution No. 74 of the Cabinet of Ministers dated 21 April 2005 on Rules for the Cleaning of Urban and Residential Areas in Accordance with Sanitary, Hygiene and Ecological Norms, Temporary Storage of Household Waste, Regular Transportation and Disposal. This document defines requirements for MSW management regarding:

- (a) Accumulation in containers (temporary storage)
- (b) Collection
- (c) Transport
- (d) Disposal and treatment
- (e) Accountability for keeping residential and recreational areas clean
- (f) Record-keeping

Specifically for Baku City, the Instructive Order of the President of Azerbaijan on Improvement of Municipal Waste Management in Baku City issued on 6 August 2008 defines the responsibility of the newly established Tamiz Shahar Joint Stock Company for the collection, transportation and disposal of solid municipal waste in Baku City.

Resolution No. 213 of the Cabinet of Ministers dated 28 October 2007 on Requirements for Management of Health Care Waste defines principles for management of this type of waste, dividing it into four classes according to level of hazard, which is in compliance with international practice:

- (a) Class A: non-hazardous (e.g. waste similar to MSW, office waste, construction waste)
- (b) Class B: hazardous (e.g. waste from surgery, pathology and other biological waste)
- (c) Class C: especially hazardous waste (e.g. highly infectious waste, pathogens of 1, 2 group)
- (d) Class D: similar to industrial waste (e.g. chemicals, expired medicines)

This resolution further defines requirements for temporary storage, transportation and disposal of this type of waste, depending on waste class. Radioactive waste and waste water are excluded from this act, as they are subject to specific legal norms. Additionally, a new form for reporting medical waste was agreed with the State Statistical Committee in 2008.

The State Phytosanitary Control Service, which is responsible for obsolete pesticides, was established under the Ministry of Agriculture by Presidential Decree No. 467 dated 23 October 2004, while Regulations for the State Phytosanitary Control Service were approved by Presidential Decree No. 226 dated 20 April 2005. The Law on Phytosanitary Control was adopted on 12 May 2006, and details on implementation of this Law were defined in 24 rules adopted by the Cabinet of Ministers. With regard to obsolete pesticides, the requirements of the Stockholm Convention were incorporated into current legislation.

Radioactive materials are regulated by the Law on Radiation Safety of the Population of 30 December 1997. On 24 April 2008, the President signed a decree on creation of an independent regulatory authority, the State Agency for Nuclear and Radiological Activity Regulation, which is under the Ministry of Emergency Situations.

Azerbaijan takes an active part in the activities of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, to which it acceded in June 2001. The Azerbaijani legal system complied with the requirements of the Basel Convention by means of Resolution No. 167 of the Cabinet of Ministers dated 25 July 2008, on rules for transboundary transport of hazardous waste.

Resolution No. 185 of the Cabinet of Ministers dated 12 May 2008 on Setting Fees for Collection, Separation, Recycling and Disposal of Waste defines the principles according to which fees are to be set and collected. This Resolution has not yet been fully implemented, but it introduces the possibility of penalizing people and organizations for dumping

waste outside permitted disposal sites or without permission.

The legislative framework for waste management was significantly improved by the implementation of several new legislative norms aimed at hazardous waste management, municipal waste management and clarification of responsibilities for specific waste.

8.4 Institutional framework

The Ministry of Ecology and Natural Resources, together with the Ministry of Health, has the responsibility for developing legislation and standards for waste management. More precisely, the task of the Ministry of Ecology and Natural Resources is to develop and enforce standards for protection of the natural environment and proper waste management practice, while the Ministry of Health focuses on minimizing waste-related health risks for humans.

In general, the responsibility of the waste generator is enforced, except for waste generated in the past. In such cases, the developer accepts responsibility for old waste.

The Ministry of Economic Development is responsible for investments in municipal waste infrastructure.

The Baku Municipality is accountable for the collection of MSW and for the distribution of containers for public buildings. The collection and delivery of MSW at the disposal site are performed by individual district authorities and private companies (Kasko, UP Azerbaijan). Operation of the disposal site and recycling are under the responsibility of the Tamiz Shahar JSC. Other municipalities in Azerbaijan rely on municipally owned collection companies, except Sumgayit, which is served by the German-Azeri joint venture company ADES. Municipalities are responsible for reporting waste amounts to the State Statistical Committee.

The collection, treatment and disposal of medical waste come under the Ministry of Health.

The responsibility for obsolete pesticides was assigned to the State Phytosanitary Control Service, which is supervised by the Ministry of Agriculture.

The Ministry of Emergency Situations handles for radioactive waste management, both for currently generated waste as well as for waste accumulated in the past. The Baku Radioactive Waste Site Izotop Industrial Complex deals with radioactive waste,

while the State Agency for Nuclear and Radiological Activity Regulation is responsible for radioactive sources in use.

The National Centre for Hazardous Waste Management – hazardous waste landfill at Sumgayit is owned and operated by Tahlükəli Tullantılar MMC (Hazardous Waste Ltd). This special purpose company was set up by the Ministry of Ecology and Natural Resources.

The Environmental Department of SOCAR is responsible for clean-up and remediation of oil polluted land and for other environment related activities.

8.5 Conclusions and recommendations

The changes in waste management in Azerbaijan, especially on the Absheron peninsula, are impressive and have the potential to considerably decrease the environmental impact from waste generation and disposal. Due to accumulation of problems in the past, current activities are focused on the most severe and visible cases and the results are positive. The following text summarizes the key decisions and actions taken:

First, defining clear responsibilities for accumulated waste and waste facilities enables the required action. Currently, all waste streams and waste accumulated in the past have a well-defined owner.

In the area of municipal solid waste (MSW) management, the division of waste generator (Baku City) and MSW servicing Tamiz Shahar JSC allows better control over waste generated and creates better conditions for introducing new technologies and improving the economics of waste management.

Regarding industrial waste, the most important decision was to demolish the old, often abandoned industrial sites in Baku and to develop new industrial zones in other areas. This has positively influenced the situation with regard to old accumulated waste, as well as waste currently generated by old technologies, and will continue to do so in the future. The industrial area of Baku is being replaced by residential buildings. This includes a plan for relocating the two refineries in Baku.

The fact that SOCAR has accepted responsibility for past oil pollution has benefits beyond the clean-up of polluted territories. First, this decision ensures the viability of remediation action, as it is not artificially limited by start/end dates of project financed by foreign donors. Second, accepting responsibility for old pollution sends an important signal to the

international community that Azerbaijan is aware of its environmental situation and has the capacity and ability to improve it. The experience gained in Absheron can and should be used to improve waste management in other parts of the country.

The presence of major foreign investors like British Petroleum (BP) supports the creation of local consulting services geared to waste management, and the Government has learned to use their expertise for solving waste management issues and hence accelerating the modernization of waste management practice.

Further improvement of waste management after the promising start depends on the continuity of current actions, the expansion of activities to other regions, and a focus on waste streams that are not yet covered by currently defined actions.

Recommendation 8.1:

The Ministry of Ecology and Natural Resources should continue implementing actions on the Absheron peninsula and also extending these actions to other regions of Azerbaijan, mainly by:

- (a) *Identifying environmental problems outside of Absheron peninsula caused by inadequate waste management;*
- (b) *Focusing assistance of donors on these problems to prepare strategies and modernization and remediation plans;*
- (c) *Defining concrete steps in order to develop advanced waste management in all regions.*

Waste-related data collected by the State Statistical Committee or the Ministry of Ecology and Natural Resources seems to be of low quality and most probably does not reflect reality. Although it is understood that there are limitations due to the undeveloped waste management infrastructure, the State Statistical Committee and the Ministry of Ecology and Natural Resources could improve the quality of collected data by gathering data from disposal facilities equipped with weighbridges.

Additionally, current waste statistics and other waste-related information do not seem to include waste generated by foreign investors active in Azerbaijan. From the environmental protection point of view, it is necessary to include data on waste generated by foreign investors, to have complete and internationally comparable waste statistics.

Recommendation 8.2:

The State Statistical Committee and the Ministry of Ecology and Natural Resources should jointly improve the quality of collected data on waste management by:

- (a) Collecting data on municipal solid waste accepted by Tamiz Seher Joint Stock Company at Balakhani disposal site, comparing results with existing estimations on MSW generation in Baku, and making adjustments in waste generation norms if discrepancies are identified*
- (b) Collecting data on industrial waste received by the National Centre for Hazardous Waste Management and verifying the existing data on industrial waste*
- (c) Including data on waste generated by foreign investors to national statistics*

The infrastructure for waste management in Baku, but in future not only in Baku, will require stable and sufficient financing of operating costs to avoid eventual failure of this infrastructure in the future due to lack of income from waste generators.

Recommendation 8.3:

The Ministry of Ecology and Natural Resources and the Ministry of Finance should:

- (a) Review and appropriately change current fees collected from citizens and industries for the use of waste collection and disposal services with the long-term goal of achieving cost recovery;*
- (b) Fully implement the 2008 Resolution of the Cabinet of Ministers No. 185 on Setting Fees for Collection, Separation, Recycling and Disposal of Waste.*

The safe storage of obsolete pesticides has been ensured, but there are still some additional actions which can further decrease environmental risks resulting from this type of waste. Furthermore, an improved picture of the obsolete pesticides would help the authorities carry out further actions. This could be done following international guidelines, such as those provided under the Stockholm Convention on Persistent Organic Pollutants.

Recommendation 8.4:

The State Phytosanitary Control Service of the Ministry of Agriculture, in cooperation with the Ministry of Ecology and Natural Resources, should:

- (a) Prepare the inventory of pesticides according to the requirements of the Stockholm Convention;*
- (b) Strengthen the system of monitoring the use of pesticides and other agrochemicals which may become hazardous waste, especially focusing on*

collection (e.g. by return to sale points) and safe disposal of unspent amounts and packaging.

The situation regarding medical waste is unchanged, and waiting until the waste incinerator in Baku is developed does not seem to be an acceptable option. The Ministry of Health should prepare for the change in its waste management practice once the incinerator goes into operation in 2012. For certain (non-biological) medical waste, a temporary storage facility should be developed. This would avoid dumping part of medical waste until the incinerator comes on stream and create a back-up facility in case when the incinerator is not able to receive this waste due to maintenance or repair.

Recommendation 8.5:

The Ministry of Health should concentrate its efforts on implementation of the medical waste strategy and legislation, with a focus on:

- (a) Development of relevant infrastructure (transportation, temporary storage and liquidation, containers) for safe delivery of medical waste.*
- (b) Training of hospital/ambulance staff in separation of this type of waste*

* * * * *

Those following parts of recommendations from the first EPR of Azerbaijan that are still valid and their preceding conclusions are listed below.

Information is essential for good policy. At the moment, statistics for industrial waste do not include all waste and do not reflect the real situation. An environmental audit of functioning enterprises as well as abandoned industrial sites is needed in order to identify all sources of industrial (non-hazardous) and hazardous waste. Similarly, an inventory of land contaminated by hazardous waste is essential before a systematic programme of clean up and reclamation is undertaken. These should be high priorities for the Government.

The Ministry of Ecology and Natural Resources provides information about mercury sludge and obsolete pesticides, and this can be found in the statistical reports. More efforts could be made to make this information accessible to the public, through, for example, issuing bulletins or information sheets, particularly as the issue relates to human health and the environment.

EPR 1 - Recommendation 6.2:

The Ministry of Ecology and Natural Resources, in cooperation with the Ministry of Economic Development and industrial enterprises, should:

- (b) Draw up an inventory of abandoned industrial sites and create a database of all industrial waste;*

The system for municipal waste collection and disposal works well in Baku city, but there is no separation of municipal waste, except for glass bottles and bread. In cities and towns outside Baku, municipal waste is collected and transported to landfills, without any

separation or treatment. Existing landfills do not meet sanitary requirements according to European standards and norms. As a result, there are several potential adverse effects, including penetration of groundwater with heavy metals, toxic organic chemicals and hazardous chemicals as well as contamination of the air in the vicinity of the landfills.

EPR 1 - Recommendation 6.5

Municipalities, in cooperation with the Ministry of Ecology and Natural Resources, should:

- (b) Construct facilities for the collection and reprocessing of this waste.*

Chapter 9

BIODIVERSITY, FORESTRY AND PROTECTED AREAS

9.1 Introduction

Since the First Environmental Performance Review that took place in 2003, the Ministry of Ecology and Natural Resources (MENR) has made a number of improvements as regards forest and biodiversity management and the establishment of protected areas. Azerbaijan, as a party to a number of biodiversity-related conventions (Chapter 4), has also made efforts to comply with their obligations and in this way improve nature management in a country where the exploitation of its natural resources had caused significant loss of biodiversity. There remain, however, some issues to be addressed, particularly in the areas of biodiversity monitoring, policy development and goal-setting, biodiversity and forestry legislation, as well as assessment and evaluation of implementation.

9.2 Biological diversity management

Azerbaijan is a party to the Convention on Biological Diversity (CBD) and, as such, has committed to specific international obligations to conserve and sustainably use its biological diversity. Azerbaijan has made increased efforts since 2003 to comply with its biodiversity obligations. In cooperation with relevant stakeholders with an interest in the conservation and sustainable use of biodiversity, such as the National Academy of Sciences, MENR submitted the First National Report to the CBD in 2004, while the next National Report was submitted in March 2010 under the title Fourth National Report. The latter contains up-to-date information on the state of flora, fauna and habitats as well as further important information related to biodiversity conservation and sustainable use. Azerbaijan has adopted and published the 2006–2009 National Biodiversity Strategy and Action Plan (NBSAP), also in compliance with CBD obligations.

Status of the components of biological diversity: genes, species and ecosystems

Genetic resources

The Caucasus region is recognized as uniquely endowed with rich biodiversity, and Azerbaijan benefits from its geographical location and variety

of landscapes. The soil and climatic conditions of the country have given rise to a great diversity of crops, a key factor for food security and sustainable agriculture. Plant genetic resources that are important for food and agriculture are abundant in Azerbaijan, but concerns remain as to the effectiveness of in situ and ex situ conservation activities, although they were a priority in the National Biodiversity Strategy and Action Plan for 2006–2009. The creation of protected areas has improved genetic diversity conservation and gene banks and live collections have been set up, but there is little genetic risk monitoring and conservation of genetic diversity needs to be addressed more prominently. Some training has been carried out with the support of international organizations on collection and conservation of agricultural plants and wild relatives. The Genetic Resources Institute of the Academy of Sciences has developed a database on food crops that includes wild relatives, and it is currently working on a database on domesticated animals and poultry. Azerbaijan is not a signatory to the FAO International Treaty on Genetic Resources for Food and Agriculture, but in 2006 it produced a first country report on the state of plant genetic resources important for food and agriculture. In 2003, a country report on the state of animal genetic resources was published, but there are no concrete plans to prepare a second one.

With respect to the conservation of crop genetic diversity, the promotion of organic agriculture is a top priority. Land fertility has decreased overall and there are some concerns about the illegal use of genetically modified organisms (GMOs) in agriculture. There is an overall view that use of GMO seeds could damage biodiversity, local landraces and domestic crop species, resulting in decreased availability of traditional seeds. Scientists are working at the Agricultural Institute on these issues in order to preserve the local landraces that are unique to the Caucasus.

There are now scientific experimental stations in almost all of the regions of Azerbaijan and they have been able to obtain special landraces of each type of crop, which have adjusted to a particular ecoregion, including some hybrids and new varieties adjusted to local conditions. With regard to landraces of domesticated



Lizard, Gobustan UNESCO World Heritage Site

animals, a cattle breeding institute is maintained under the Ministry of Agriculture, and there are sectors within the State agricultural enterprises dealing with cattle breeding and artificial insemination of landraces of domesticated animals. In addition, there are State and private landrace enterprises where the genes are stored and bred for both animals and plants.

Species diversity

Azerbaijan has a diverse fauna, particularly avian fauna, and some regional endemic species of amphibians, reptiles and birds as well as a rich variety of endemic plant species, other important plant species, and species of medicinal herbs. In 2008, the Ministry of Ecology released a publication entitled *Medicinal Herbs of Azerbaijan* to increase awareness on the medicinal properties and importance of these plants. The first Red Data Book for endangered flora and fauna of Azerbaijan was published in 1989, and covered some 140 rare and endangered plant species and 108 animal species. Of the total number of plant species in the Red Data Book, 57 are endemic, 23 are relics, and 26 are cultivated. Around 40 of the plant species contained in the 1989 Red Data Book are protected. One hundred and eight species of fauna are recorded in the Red Data Book: forty species of insects, five species of fish, five species of amphibians and nine species of reptiles are listed as endangered. Twenty-one bird species have been found to be globally or nationally threatened. Thirty-three per cent of mammals in Azerbaijan are included in either the Azerbaijan Red Data Book or classified as globally threatened on the IUCN Red List, and around

a quarter of mammal species have naturally restricted ranges. Species of carnivores such as the striped hyena, Caucasian leopard and wild cat are considered locally extinct due to hunting and habitat loss.

In the year 2000, regulations were approved to carry out the work to produce the second Red Data Book with updated information and instructions on how to proceed. Since then, a number of additional decrees were promulgated in 2005 and 2006 with respect to the work on the Red Data Book, including one establishing a committee on rare and endangered animal and plant species. This body was composed of relevant MENR departments, various institutes of the Academy of Sciences, Baku State University, Agricultural Academy, Ecological Monitoring Foundation, representatives from various local executive authorities, NGOs and the Zoological Park of Baku. The committee and its working groups no longer exist. In 2006, a unit was established within MENR to deal with rare and endangered plants and animals and follow up on the Red Data Book.

The Botany Institute of the Academy of Sciences was particularly concerned about the methodologies that would be used for the new Red Data Book, given the development of internationally accepted methods for conservation assessment and monitoring since the original decrees. However, MENR stated that while the 1989 Red Data Book included only two International Union for Conservation of Nature (IUCN) categories for conservation, the new Red Data Book will include five IUCN categories. It is expected that it will contain a total of 450 plant species and 220 animal species.

Table 9.1: Ex situ collections of plant genetic resources for food and agriculture

Institutions	Priority plants
Genetic Resources Institute	All plant genetic resources for food and agriculture priorities for Azerbaijan: agricultural crops and their wild relatives, medicinal, aromatic and oil bearing plants
Central Botanical Garden	All plant genetic resources priorities
The Institute of Bioresources	Wheat, barley, chickpea, bean, lentil, fruit crops, wild flora, useful plants, medicinal plants
Research Institute of Agriculture	Wheat, barley, maize, rye, triticale, oat, tobacco, chickpea, lentil
Research Institute of Cotton growing	Cotton
Research Institute of Vegetable Growing	Tomato, cucumber, onion, garlic, leguminous vegetables, potato, watermelon, melon, pumpkin, other vegetable, leaf vegetables, spice vegetables
Research Institute of Viticulture and Enology	Grape
Research Institute of Forage Crops, Meadows and Pastures	Alfalfa, sainfoin, orchard-grass, oat, other forage crops
Research Institute of Horticulture and Subtropical crops	Apple, pear, quince, fig, almond, pistachio, walnut, hazelnut, chestnut, apricot, alycha, plum, sweet cherry, cherry, citrus crops, medlar, pomegranate, and other fruits and berries, tea
Research Institute of Silkworm Breeding	Mulberry
Araz Scientific Industrial Amalgamation	Wheat, barley, alfalfa, apple, pear, quince, fig, walnut, hazelnut, apricot, alycha, plum, sweet cherry, cherry, pomegranate and other fruits and berries
Agricultural Academy	Wheat, maize, barley, apple, pear, quince, fig, walnut, hazelnut, apricot, alycha, pomegranate and other fruits and berries, annual and perennial vegetable crops

Source: Azerbaijan Genetic Resources Institute, 2010

MENR has reported that the Red Data Book will be published by mid-2011.

Species diversity in the Caspian Sea

Representatives of 10 orders of bony fish (Class Osteichthyes) have been found in the Azerbaijani territory of the Caspian Sea and species from the orders Clupeiformes (herring) and Perciformes (perch), amongst others, are endemic. Azerbaijan has five species of fish, which are endangered as a result of anthropogenic activities. *Acipenser mudiventris*, a species of sturgeon, is included in the Red Data Book and another six sturgeon species are on the IUCN red list of endangered species. The Caspian Sea sturgeon is well known as a threatened species of economic importance that is impacted by overfishing.

All species of sturgeon are protected and included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The CITES Parties have agreed that for countries which share the stock of a given species,

export quotas must be derived from catch quotas that are based on an appropriate regional conservation strategy and monitoring regime. The export quotas, which should normally be agreed by all the range States sharing the stock, must be provided to the CITES Secretariat by 31 December of the previous year, together with the scientific data used to establish the catch and export quotas. If the quotas have not been communicated by the deadline, then the relevant range States have a zero quota until such time as the quotas are submitted; CITES Parties are recommended not to accept imports of caviar and meat from these stocks. In Azerbaijan, scientific reports on the status of the sturgeon are prepared by the Fisheries Institute, and the Bioresources Commission of the Caspian Sea identifies the quotas for sturgeon for the range States once a year. In 2009, a lack of agreement between the five Caspian countries, Azerbaijan, the Islamic Republic of Iran, Kazakhstan, the Russian Federation and Turkmenistan, resulted in a suspension of wild caviar imports from those countries. However, the 2010 quotas have now been agreed by them and the quantities that can be exported are lower than

in 2008. The CITES Secretariat maintains that the quota system drives the Caspian countries to agree on common management objectives to improve the state of depleted stocks.

Azerbaijan is a party to the Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Tehran Convention). To meet commitments under this instrument, the States Parties are drafting the Protocol on Protection of the

and mountain ecosystems. Forest ecosystems will be addressed throughout the Chapter in relation to forestry management.

Grassland and desert ecosystems

Azerbaijan contains semi-desert ecosystems (from the height of the Caspian Sea to the Orta Araz gorge) that cover 32 per cent of its territory, including the foothills of the greater Caucasus and the lower

Box 9.1: Red List of Endemic Plants of the Caucasus Region

The Institute of Botany of the Academy of Sciences participated in the data collection for a red list on rare and endangered species of endemic plants of the Caucasus. The project, financed by the Critical Ecosystem Partnership Fund (CEPF), is implemented by IUCN-The World Conservation Union and the Missouri Botanical Gardens in collaboration with Armenia, Azerbaijan, Georgia, Russian Federation and Turkey. Training was provided to the scientists on internationally accepted methods for plant conservation assessment and monitoring using the IUCN Red List Categories and Criteria.

The data collected for the species assessments resulted in a comprehensive list of Caucasus endemic plant taxa containing some 2,950 species/subspecies/varieties and Red List assessments of around 1,160 taxa were made with about 60 per cent assessed as threatened, i.e., critically endangered, endangered or vulnerable. A publication is expected in 2010 and will feature 100 rare and endangered endemic plants from Azerbaijan.

Caspian Biodiversity which is expected to be ready for discussion later this year. The CASPECO Project (UNDP/GEF) aims at strengthening the regional environmental governance through support to the Tehran Convention process and arresting the declining trend of bioresources by applying new thinking to the sustainable management and conservation of Caspian bioresources. Under this project, a number of species conservation activities are taking place in the Caspian Sea region.

Ecosystem diversity

Ecosystem goods and services are at the very core of human well-being, providing food, fresh water, wood and fibre, as well as cultural experiences such as recreation and education, amongst many others. In addition, healthy and diverse ecosystems provide regulating services to moderate the effects of extreme weather events such as floods and reduce the impacts of climate change, as well as help control disease transmission and purify water. Accordingly, well-maintained ecosystems are essential for food and water security and increased resilience to climate change and natural hazards, and can contribute to poverty alleviation.

There are five types of ecosystems in Azerbaijan: forest ecosystems, grassland and desert ecosystems, coastal and marine ecosystems, wetland ecosystems,

reaches of the Ajinohur and Jeyranchol mountains. In addition, within the semi-desert areas there are grassland ecosystems (Kura River and Caspian basins, and Nakhichevan Autonomous Republic). Long-term irrigation has changed the soil structure in the Kura-Araz lowlands, and there is an ongoing salinization process with the rising level of the Kura River.

Mountain ecosystems

An area of 10 per cent of Azerbaijan's territory falls within the mountain ecosystem classification. Between heights of 2,000-4,500m, it is possible to find alpine meadows and there are subalpine meadows in the northeast Greater Caucasus, the Garabag volcanic plateau and ranges, Shahdag and Murovdag. Nakhichevan Autonomous Republic contains mountain ecosystems with highly diverse alpine and subalpine meadows with over 890 species of plants. The steppe meadow vegetation contains aromatic herbs of medical and economic importance. However, the high mountain meadows and pastures have been severely affected by overgrazing; the alpine meadows less so because of low productivity.

Wetland ecosystems

The importance of the wetland ecosystems of Azerbaijan is well recognized. Wetlands and lakes can support up to one million birds during the annual

Table 9.3: Fauna

Species	Azerbaijan	Nakhichevan
Invertebrates	N/A	N/A
Butterflies	4,500	N/A
Beetles	4,000	N/A
Ants, bees, wasps and sawflies	2,500	N/A
Flies, mosquitos and gnats	2,000	N/A
True insects	874	N/A
Plant insects	739	N/A
Vertebrates	N/A	N/A
Roundnoses	1	0
Fishes	101	29
Amphibians	10	6
Reptiles	54	35
Birds	394	241
Mammals	107	60

Source: Ministry of Ecology and Natural Resources.

migrations, while lakes support a diversity of plant species. Some key lakes and wetlands, their diversity and their location are described in Table 9.4.

Coastal and marine ecosystems

The Caspian Sea

The North Caspian is the most species-diverse part of the sea, but almost all indigenous species are found in the middle of the sea due to the stability of the water composition. It is an ecosystem different from the major world's oceans. It features high biodiversity and a large number of endemic species, and contains globally threatened bird and fish species. It is also a major migration route for birds where breeding (120 species), over-wintering (62) and migration (278) take place.

Given the degradation of some important ecosystems in Azerbaijan and the associated loss of provisioning and regulating services for the population, policymakers from all relevant Ministries would be advised to include the management and restoration of ecosystems in their national investment strategies to safeguard future availability of ecosystem goods and services.

Threats to biological diversity and its components

The main threats to the conservation of biodiversity in Azerbaijan include habitat loss and modification; overuse of biological and natural resources; pollution; invasive alien species; natural pathogens; and climate change and natural disasters. Some of these threats are further described below.

Table 9.4: Lakes and wetlands

Lake Agizibir	38 species of zooplankton, 130 species of macrobenthic organisms, 181 bird species, supports 200,000 wintering birds	Caspian coast
Lake Gush	79 species of wader species and 9 species of raptors, supports 31,000 birds	Salyan region
Kura Delta	Reed beds, supports 75,000 waders	Caspian shore
Sarisu Lake	High numbers of zooplankton and phytoplankton, reed beds, breeding site for 29 species of birds, including globally threatened species	Kura River Imishli region
Aggol Lake	87 species of breeding birds	Kura River Agjabadi region

Source: Ministry of Ecology and Natural Resources, 2010.

Habitat loss and modification

In Azerbaijan, with increases in the population, successful agrarian reform and the country's agricultural growth policies, land has been converted at high rates for agricultural purposes, including for use as pastoral lands. In 2007, the World Bank estimated the agricultural area at around 58 per cent of the total land area. However, land conversion has caused an increase in habitat loss and biodiversity loss in recent years. In addition, oil production and other industrial uses of land as well as new construction of buildings and infrastructure have all contributed to biodiversity loss by changing or destroying natural habitats and increasing fragmentation of the land. Land degradation has also increased in Azerbaijan due to soil erosion and salinization. It is estimated that over 5.0 million ha of land are in a degraded state as a result of poor irrigation and drainage systems, groundwater extraction and timber extraction. Raising livestock such as cattle, goats and sheep has become very popular due to agrarian reform, rising demand and the profitability of this business. Increased livestock density has caused severe overgrazing, which also contributes to soil erosion. The 8.2 million head of sheep and goats, as estimated in January 2008, need far more winter and summer pastures than are available. Azerbaijan would need 3.05 million hectares of winter pastures and 1.51 million hectares of summer pastures to be able to provide this amount of sheep and goats with sufficient winter and summer pastures. However, in 2008 there were only 1.4 million hectares of winter pasture available with a capacity of 2.88 million head and 0.56 million hectares with a capacity of 1.94 million heads. Land desertification is increasing in Absheron and Gobustan due to intensive use of pastures, which are eventually rendered useless when livestock is kept on winter pastures throughout the year. Azerbaijan has received financial support from the World Bank (2005–2009) for a rural environment project to improve natural resource management and prepare pasture management plans aimed at protecting biodiversity of global significance in two mountainous areas. However, the problem of overgrazing continues unabated.

Overuse of fertilizers, herbicides and pesticides in agriculture is also affecting biodiversity, but the use of fertilizers has decreased because of the cost.

Despite a successful programme to provide gas fuel to rural populations to decrease the use of wood for fuel, some illegal logging continues in Azerbaijan, contributing to habitat fragmentation. The country's

natural steppes are being fragmented by conversion to agricultural lands and irrigation channels; and this fragmentation in turn has affected the steppe bird populations. The construction of dams, such as Mingachevir and Bahramtapa reservoirs, has caused fragmentation of the riverine habitat and reduced the breeding areas for sturgeon.

Overuse of biological and natural resources

The 2004 hunting and fishing regulations that have been established in Azerbaijan have had a positive impact. MENR is now the sole State authority controlling hunting and the management of hunting areas, which has made enforcement of the law more effective. However, some illegal fishing and hunting activities still exist, which continue to put pressure on several species. There is a need for increased efforts in education and public awareness activities with respect to certain species that are considered dangerous amongst the population and are therefore not regarded as important to conserve. The overgrazing of land by livestock also falls within the category of overuse of biological and natural resources, but has been explained fully under habitat loss and modification.

Invasive alien species

Three invasive species are mentioned as particularly damaging to Azerbaijan's biodiversity as well as its economy. The comb jelly (*Mnemiopsis leidyi*) was introduced into the Caspian Sea in 1999, mostly from ballast waters of tankers from the Volga-Don Canal, and has exceeded the general productive biomass of the sea since then. It feeds on zooplankton, including fish larvae, and is causing major problems to the food chain as it has no predators. Another invasive species is the American racoon (*Procyon lotor*), which was introduced into the Ismayilli region in 1941 and has spread throughout the forests in other regions. Lastly, the American white butterfly causes damage to nature and agrobiocenoses in Azerbaijan, and its dissemination is increasing as it is resistant to control efforts. Invasive alien species are a global threat, dealt with at the international level through the Convention on Biological Diversity. In the pan-European region, a European Strategy on Invasive Alien Species, developed within the framework of the Berne Convention, encourages member States to implement co-ordinated measures so as to prevent or minimize their adverse impacts on native biodiversity. At the moment, there are no actions related to adoption of the pan European strategy or another similar strategy at the national level.



Reforestation on the Absheron peninsula

9.3 Forestry management

Since 2001, forest coverage has increased by 0.4 per cent and currently stands at 11.4 per cent of the country's area. Azerbaijan did not submit a country report to FAO for the 2010 Forest Resources Assessment so there is no up-to-date publicly available data on its forests, except for data from a forestry meeting in 2005 and internal data of the Ministry. The 2010 FAO country report for Azerbaijan for the Forest Resources Assessment (FRA2010) was therefore developed based on a desk study. The data that Azerbaijan made available at a UNECE meeting in 2005 highlighted that the country at that time had 1.214 million km² of forest land, which is equal to 11.4 per cent of its whole area. The forests are located in the Greater Caucasus (49 per cent), Lesser Caucasus (34 per cent), Talysh Mountains (15 per cent) and the lowlands (2 per cent).

The diverse landscape of the country has produced a variety of trees. However, although there are 107 wood species covering large areas, only three species make up 85 per cent of the forest land. Eastern beech (*Fagus orientalis*) is found on 32 per cent of the forested land, Oak (*Quercus*) is found on 31.5 per cent and Hornbeam (*Carpinus*) is found on 22.5 per cent of the forest area.

The forests in Azerbaijan are owned by the State and cannot be used for commercial logging because of their importance for soil protection, watershed protection and other services. The State is currently

carrying out a system of sanitary cuttings, which is explained as the necessary actions to maintain the forests in a healthy condition. The Ministry of Ecology and Natural Resources states that from 50,000 to 60,000 m³ of forests are cut each year under this policy and the wood is sold to the military for their energy requirements. MENR Inspectorates monitor the amount of wood being cut, and sends an inspection team out to investigate if there are any out-of-the-ordinary increases. The country's wood needs are met by importing wood from the Russian Federation, approximately 500,000–600,000 m³ per year.

The forest land itself, however, can be used for commercial purposes as well as the non-wood products supplied by forests. Medium-term (1 to 10 year) contracts are provided by the Government for recreational/tourism activities in return for payment, and short (1 year) and medium-term contracts for agricultural purposes are provided in return for a 20 per cent payment from the revenue or in kind in the form of crops harvested. The lease is provided on the condition that forest saplings are planted on 20 per cent of the land that has been rented (about 100 ha are planted every year). When trees are planted, the fauna and their habitats are usually taken into consideration. The Forest Department monitors the commercial leases with staff from the ministry working in 40 offices in all regions. The funds obtained from the sale of wood and the leases amount to approximately US\$ 1 million per year and are collected in a State forest fund, which is used to cover the costs related to forest management (e.g. equipment, uniforms and

Box 9.2: Current priorities of the forest sector

- (a) Prevent illegal logging and other types of deforestation in the forests;
- (b) Study the current state of forests, carry out an inventory of forests, and develop new forest structure projects;
- (c) Organize the efficient use of products of rehabilitated forest reserves (fruit, medicinal plants and other technical plants);
- (d) Design and plant fast-growing forest plantations that meet the needs of new planting systems to rehabilitate forests;
- (e) Identify forest areas of recreational importance, determine admissible volume of pressure on them, and on this basis identify its recreational capacity for tourism and make proposals;
- (f) Identify the phytosanitary state of forests and implement relevant measures to protect them from illnesses and harmful pests.

Source: Ministry of Ecology and Natural Resources

vehicles). Currently, 14 commercial enterprises are operating in the forests and provide revenue to the State of about US\$ 300,000 per year, which also goes into a special State fund for management and staff expenses in the areas where these commercial activities take place (Chapter 5). Enterprises include the harvesting of the 150 species of wild fruit plants in the forests, which produce each season a thousand tons of a variety of wild fruits, such as walnut, apple, pear, zagal, sour plum, azgil, persimmon, chestnut, hazelnut and blackberries. Another forest enterprise is beekeeping, and some 700 bee families are bred in the forestry units.

Forest restoration

A presidential decree established the National Programme for Restoration and Extension of the Forests in the country for 2003–2008. During that period, forest restoration works were carried out in an area of 59,184 ha. In an area of 22,855 ha, planting and sowing works took place, 213 millions crops were planted, and 1,127 tons of seeds were supplied during the implementation of the Programme. Through another presidential decree, the Programme Greening and Landscape in Non-forest Areas was established in



Venerable oak tree in Hirkan National Park

order to plant trees along the highways of the country and especially on Absheron peninsula in 2009. The greenery activities carried out under this programme are still under way in 2010.

Forest protection

A positive development for the forests in Azerbaijan has been the Government's programme to supply gas to 80 per cent of the rural areas, and the use of forests for fuel has reportedly decreased. With this gasification, forests only need to meet two per cent of the population's fuel needs. NGOs still have concerns that illegal logging of relict trees continues in some areas, and the Ministry recognizes that there is some illegal logging ongoing although on a lesser scale compared with the first EPR. The Forestry Department stated that the volume of illegal logging had been reduced from 49,000 m³ to 31,400 m³ from 2003 to 2007. It has put in place a number of controls to decrease illegal logging by providing horses to inspectors to monitor the areas concerned and establishing a rapid response team to perform inspections when there is a suspicion of tree felling or poaching in the forests. The Ministry confirms that the community has become more involved in conservation now, as there is a number of people who can call to report illegal hunting or logging activity.

9.4 Protected areas system

In 2003, Azerbaijan had 37 protected areas (14 state nature reserves, 20 state nature sanctuaries and 3 national parks) covering 7 per cent of the country's territory or 565,225 ha. Since then, Azerbaijan has further developed the protected area system and increased the number of areas to 45 (11 state nature reserves, 24 state nature sanctuaries and 8 national parks) covering 10.1 per cent of the territory or 876,236.1 ha. In some cases, reserves were merged and their status was changed to national park status following the mergers.

As a result of presidential decrees and decisions of the Cabinet of Ministers since 2003, the Shirvan, Agh-gol, Zangazour, Hirkan, Altiaghaj, Absheron, Shah Dag and Goy-gol national parks, the Shahbuz and Eldar Shami Korchay natural sanctuaries, and the Gakh, Araz boyu, Hirkan, Zagatala, Arpachay and Rvaroud nature reserves have been created. And in recent years, the areas of Turyanchay, Garayazi, Ismayilli and Zagatala nature reserves, and Hirkan and Zangazour national parks have been enlarged. The status of nature reserve was also granted to 52 mud volcanoes by presidential decree. Recently,

250,000 ha of forest land that were in protected areas were transferred to the protected areas department for management.

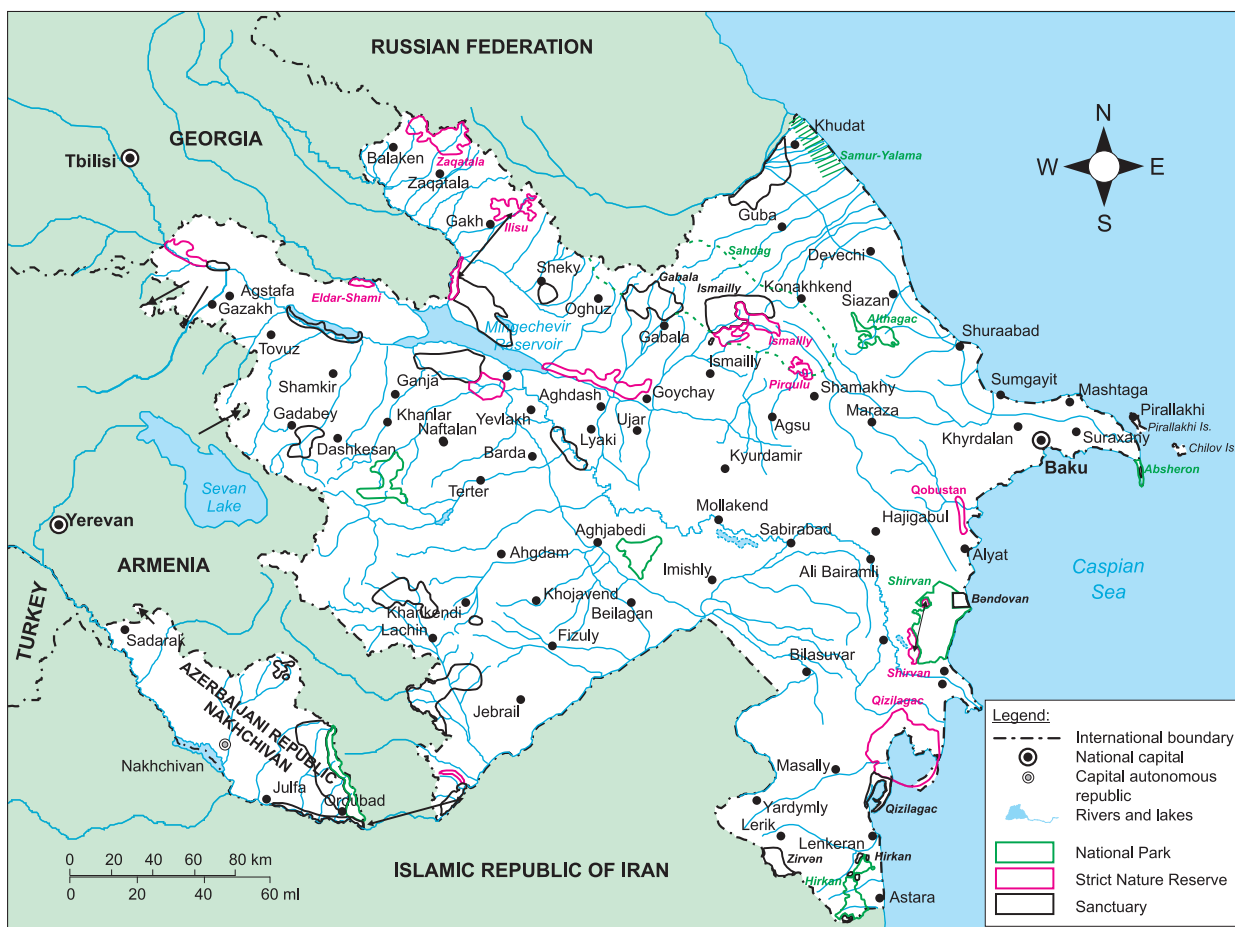
Currently, only Hirkan National Park has had a management plan approved. A management plan for Shah Dag National Park has been developed but has not yet been approved.

There are further efforts taking place for the creation of additional national parks and nature reserves, including the creation of a seaside national park covering approximately 100,000 ha through the enlargement of the Gyzyllaghaj nature reserve. There are also plans to create a pilot biosphere reserve in the Southern Caucasus on the basis of the Zagatala nature reserve, as well as to establish the Samour-Yalama national park as part of the Caucasus Initiative Programme financed by Germany. A proposal was submitted in 2006 to UNESCO's World Heritage Convention to add Hirkan National Park to the cultural and natural heritage list. However, given that Hirkan's forests are transboundary with the Islamic Republic of Iran, the Convention Secretariat recommended the submission of a joint proposal, and Azerbaijan is cooperating with the Islamic Republic of Iran in this regard.

In 2004, an agreement on an Emerald Network pilot project was signed by the Ministry of Ecology and Natural Resources and the Council of Europe, the Secretariat of the Bern Convention on the Conservation of European Wildlife and Natural Habitats. The first phase of the pilot project has resulted in the creation of a systematized database for the established areas within the project and development of a report on the Emerald Network pilot project for the submission of proposals on protected areas for each biogeographical region. The second phase of the programme is currently ongoing in Azerbaijan.

The Framework Convention for the Protection of the Marine Environment of the Caspian Sea is the first legally binding regional agreement signed by all five Caspian littoral States, laying down the general requirements and the institutional mechanism for environmental protection in the Caspian region. Currently, the Parties to the Tehran Convention are negotiating a biodiversity protocol, which should help in the further protection of this marine ecosystem and consolidate its role as a habitat for biodiversity of global importance, including through the designation of marine protected areas.

Map 9.1: Protected areas



Source: Ministry of Ecology and Natural Resources, 2010.

Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

Monitoring of biological diversity in protected areas

Every year, in the autumn and spring months, an inventory of mammal and bird species considered as priority species is carried out by MENR, the National Academy of Sciences and NGOs. Moreover, research fellows in the protected areas routinely monitor the biodiversity components of those areas. Data are collected and analyzed for the preparation of a final country report, which is prepared by the Biodiversity Conservation and Protected Areas Development Department at the Ministry. The report helps with the analysis of gains or losses in the number of various species.

At the subregional level, the World Wildlife Fund (WWF) Caucasus office has been working on the creation of a database to assess and monitor biodiversity using indicators. This activity is carried out jointly with the authorities of the Southern Caucasus region responsible for environment with

support from the MAVA foundation. An initial version of the database containing 2008–2009 data for monitoring of biodiversity and protected areas in Azerbaijan has been developed and is being tested.

9.5 Legal framework

Biodiversity

Azerbaijan does not have a law on biodiversity. There are a number of separate biodiversity-related laws that have been adopted and make up the national legislation relevant to biodiversity conservation, as well as relevant legal-normative acts, including 17 decisions of the Cabinet of Ministers on biodiversity conservation.

Since the last EPR, three additional laws have been adopted: the 2004 Law on Hunting, the 2006 Law on Phytosanitary Control and the 2009 Law on Beekeeping. The Law on Hunting regulates hunting

Box 9.3: Hirkan National Park

This national park is located in a pristine part of the Talysh Mountains and currently occupies an area of 40,358 ha, mostly covered by forests. The forests in Hirkan are well preserved, and a major objective of the park is to protect the mainly endemic and rare tree and shrub species, particularly the humid subtropical and humid temperate forests. Of the 435 tree and shrub species existing in Azerbaijan, Hirkan contains 150 species, including 36 endemic species. The Moscow Forest in Hirkan National Park lies within the Lankaran lowland. It is the only preserved part of the Caspian Hyrcanian mixed forests that has been cleared for agriculture. The Ministry of Ecology and Natural Resources is carrying out a reforestation programme to restore a currently non-forested lot to its previous forested state and in this way create a second forest in the lowland.

The park provides a favorable habitat for many species of animals, most prominently the Front-Asian leopard, which is threatened with extinction and is in the Red Data Book of Azerbaijan and the IUCN Red List species list. Other animals found in Hirkan National Park include the lynx, wild cat, badger, wild boar, roe deer, sika deer and raccoon. There are over 118 bird species, including black stork, osprey, Northern goshawk, imperial eagle, Talysh Caucasian pheasant, and black francolin, all of which are in the Red Data Book of Azerbaijan. One can also find a number of Red List insect species such as the Talysh longhorn beetle, Talysh ground beetle, speckled wood, Talysh orangetip butterfly, Caspian parandra, brahmia moth and others.

Source: Ministry of Ecology and Natural Resources, Hirkan National Park website

activities through the establishment of hunting quotas, a permit system for hunting, hunting fines and the management of hunting areas. MENR is now the sole authority controlling hunting activities and the management of hunting fields. The Law on Beekeeping contains several protective measures such as ensuring honeybee protection as pollinators of agrarian and natural ecosystems. The Ministries of Agriculture, of Environment and Natural Resources, of Health, of Education, and of Culture and Tourism have been assigned as executive bodies for the application of the Law. The Law on Phytosanitary Control determines the legal basis for organizing and exercising phytosanitary control in the territory of the Republic of Azerbaijan and regulates relations between subjects acting in the field of plant protection and plant quarantine. It is implemented by the State Phytosanitary Control Service under the Ministry of Agriculture and covers activities for the protection from quarantine pests; prevention of mass spreading

of pests in plants and plant products; protection of flora and fauna from the impact of pesticides and other pests; prevention of the introduction and spread of pests that are under phytosanitary control from other countries to Azerbaijan, and other relevant measures. Azerbaijan ratified the CBD's Cartagena Protocol on Biosafety but the draft biosafety law (draft law on safety during genetic engineering activity) was rejected by Parliament. It is not known when such a law will be passed and put in force.

Protected areas

There are a number of important pieces of legislation related to protected areas. One is the Law on Nature Conservation, where State nature reserves and protected areas are defined. Another is the Law on Protected Areas and Sites setting out the tenets for the management and use of protected areas according to the conservation and sustainable use objectives

Table 9.5: National parks

Name	Area ha	Year of establishment
Zangazur National Park (previous Ordubad N.P.)	42,797	2003
Shirvan National Park (Ramsar site)	54,374	2003
Aggol National Park	17,924	2003
Hirkan National Park	40,358	2004
Altiaghaj National Park	11,035	2004
Absheron National Park	783	2005
Shahdagh National Park	115,895	2006
Goygol National Park	12,755	2008

Source: Ministry of Ecology and Natural Resources, 2010.

of the Republic of Azerbaijan for these areas. These objectives include goals related to science, culture, education, tourism and recreation, amongst others. The Land Code of Azerbaijan also defines the types of lands that can be assigned as protected areas such as nature conservancy lands; nature reserve lands; health resorts; recreational lands and historical-cultural lands.

Forestry

The Forest Code continues to be the main legal instrument under which forest management is carried out, but there are also aspects of the Law on Environmental Protection that affect forest management. The Forest Code is regularly amended as the need arises; mostly in terms of increases in fines for illegal activities in forests and the price of wood proceeding from sanitary cuttings. Similar to the biodiversity sector, the forestry sector is also governed by relevant decisions by the Cabinet of Ministers.

9.6 Policy framework

The major national policy framework on biodiversity, as required by the CBD, was set out in the National Biodiversity Strategy and Action Plan (NBSAP). Implementation had just begun at the time of the first EPR, approved by presidential decree in 2006. The main focus of NBSAP was on biodiversity-related activities to take place from 2006 to 2009. The Ministry reports that almost all activities were completed but no external, publicly available report of implementation or assessment of implementation was available. MENR is now in the process of deciding whether to develop a second NBSAP. The CBD maintains that a national strategy will reflect how the country intends to fulfil the objectives of the CBD in light of specific national circumstances, and the related action plans will constitute the sequence of steps to be taken to meet these goals. Without a national strategy on the conservation and sustainable use of biodiversity, Azerbaijan will not only fail to meet its commitments under the CBD but will also be unable to address the gaps in conservation and sustainable use of biodiversity and ensure that actions are undertaken at all levels and in all sectors, in a coordinated and crosscutting approach. A national biodiversity strategy and action plan helps integrate conservation and sustainable use of biological diversity into sectoral and cross-sectoral planning and into national decision-making in general.

The expansion of the protected areas system was an objective within the national biodiversity strategy and

action plan, and was carried out within the framework of the Convention on Biological Diversity and their guidance entitled “Towards Effective Protected Areas Systems – An Action Guide to Implement the Convention on Biological Diversity Programme of Work on Protected Areas”. Azerbaijan also received assistance from the World Bank to set up national parks in connection with rural development projects as well as from Germany, WWF, Conservation International and the Critical Ecosystem Partnership Fund as part of regional protected areas initiatives such as the Caucasus Protected Areas Fund.

Earlier, in Chapter 2, forest programmes were mentioned as frameworks in which actions were carried out on forest management. However, the National Programme for the Restoration and Expansion of Forests has expired and Azerbaijan does not at present have a policy framework in which to operate with goals and objectives for the sustainable management of its forests. Although Azerbaijan is a signatory to the Ministerial Conference for the Protection of Forests in Europe, now ForestEurope, and has agreed on principles on sustainable forest management for the pan-European region, it has not prepared a national forest programme. The countries participating in the pan European forest process have agreed that a national forest programme constitutes a participatory, holistic, inter-sectoral and iterative process of policy planning, implementation, monitoring and evaluation at the national and/or sub-national level necessary for the further improvement of sustainable forest management.

9.7 Institutional arrangements

The Ministry of Ecology and Natural Resources is a central executive body and its work is governed by the Agrarian Policy Department at the Cabinet of Ministers. A number of departments within the Ministry have nature conservation responsibilities: the Forest Development Department, the Biological Diversity Conservation and Protected Areas Development Department, the Environmental Protection Department, and the Department for Development and Protection of Biological Resources in Water Basins. They also have their various agencies working at the regional level.

Forestry

The structure of the Forestry Department, which is attached to the Ministry of Ecology and Natural Resources, comprises the following sectors: the Official State Cadastre, Restoration and Afforestation,

Enforcement of Forest Legislation, Forest Saplings and Seed Growing, the Scientific Research Institute of Forestry, Forest Guardianship and Restoration, the Centre of Protection against Vermin and Illnesses, and a Coordination Centre. The Forestry Department also includes 32 local departments of forest protection and regeneration, 3 forest-planting enterprises and 3 forest nurseries. The Forestry Department is involved in forest management at the sub-national and national levels.

Biodiversity and protected areas

The institutional structure at the Ministry has changed since 2003. Biodiversity protection and protected areas development are contained in one department, with various specialized sectors operating under the department: Biological Diversity Protection and Rehabilitation; Rare and Endangered Flora and Fauna Protection and Wild Nature Rehabilitation; Protected Nature Areas, Hunting Activity Development and Ecotourism; Control of Legislation Implementation of Biological Diversity Protection; the Centre of Ecotourism and Hunting Activity Development; the Liaison Centre; the Epidemiological Control Laboratory on Wild Nature; National Parks; State Nature Reserves; and State Nature Sanctuaries.

The National Academy of Sciences, through various institutes, has been involved in biodiversity research for many years, and there is a sizeable body of literature on the country's species and ecosystems even though ecosystem classification, structure and function is a new area of research. Within the Academy of Sciences, some institutes carry out biodiversity research directly: the Institute of Microbiology focusing on the distribution and applied use of microorganisms; the Institute of Botany on the distribution and ecology of lower and higher plants, including the description of new species of algae from the Caspian Sea; the Institute of Zoology on the distribution, ecology, evolution and protection of animal species and species composition of zoogeographical complexes, including the description of 200 new species; and, the Institute of Genetic Resources on assessments of the genetic bank, agro-biodiversity and wild relatives, assessments for sustainable use of biodiversity. The Genetic Resources Institute coordinates the activities of other institutions towards a national inventory and database for genetic resources and biodiversity of the country. The Botanical Gardens conduct research on the ecology and introduction of useful, rare and disappearing plants, and has collections of a number of important taxa.

Sectoral cooperation

Although MENR has a very open approach to information and has a good website for the general public, NGOs and the MENR work independently of each other rather than jointly to achieve common goals on biodiversity conservation and sustainable use. NGOs participate in a number of international projects that do not seem to be linked to a common national strategy. This may be a problem tied to the lack of a current national strategy on biodiversity. Birdlife, for example, mentioned that in the past it has carried out monitoring activities in collaboration with the Ministry but this is no longer the case. A similar concern was voiced by the Academy of Sciences, when it expressed a desire to work more closely with the Ministry on the Red Data Book and the conservation and sustainable use of genetic resources.

In terms of inter-sectoral cooperation, there is a lack of collaboration between the Ministry of Ecology and Natural Resources and the Ministry of Agriculture. Many overlapping interests exist between these two Ministries and a number of activities could take place jointly through inter-sectoral cooperation. There was a common understanding that each dealt with its own issues under its competence without seeking synergies. However, the Ministry of Agriculture explores cooperation with the Ministry of Ecology and Natural Resources on agricultural practices that impact biodiversity, both positively and negatively. On the other hand, the Ministry of Industry and Energy cooperates with the Ministry of Ecology and Natural Resources. The Ministry of Industry and Energy has recognized the damage caused to the nature from indiscriminate oil extraction. The State Programme on the Use of Alternative and Renewable Energy Sources takes into account conservation of biodiversity and natural habitats when planning the sites of wind power stations. Accordingly, an atlas is in preparation to provide guidance on the location of sensitive ecological areas.

Due to recent health pandemics, the Ministry of Ecology and Natural Resources collaborates closely with the Ministry of Agriculture and the Ministry of Health. There is cooperation with agricultural, transport and other economic sectors in the areas related to forest management. Cooperation exists mainly in the implementation of joint projects in planting forest strips in the territory of the country. Monitoring of forest management is implemented by the National Monitoring Department on Environment, which also carries out functions related to enforcement of legislation and compliance. NGOs also conduct

some monitoring of the forests, and stakeholders both in the private sector and civil society play a role in forest management. There is cooperation with State authorities in providing education to the general population, as well as in conservation and efficient and sustainable use of natural resources, and in planting new forests.

The Ministry of Agriculture operates a number of scientific institutes that conduct research relevant to agro-biodiversity, both in terms of selection and plant preservation: the Institute of Vegetable Growing focusing on vegetables and melons; the Institute of Horticulture and Subtropical Plants on fruits, nuts and tea plants; the Scientific Institute of Viticulture and Wine Making on grapes and vines; the Institute of Fodder, Meadows and Pastures on fodder production and methods for sustainable use of pastures; and the Institute of Cotton-Growing on cotton production. In addition, applied research on fish biodiversity has been conducted by the Institute of Fish Culture of the Ministry of Ecology and Natural Resources.

9.8 Conclusions and recommendations

The Government has indeed made increased efforts to meet its biodiversity obligations, particularly by focusing on the creation of protected areas. However, genes, species and ecosystems, the components of biodiversity, continue to be under threat in the country as a result of harmful economic activities that do not take into account the need to conserve and sustainably use biodiversity and maintain ecosystem services. For example, unsustainable agricultural practices, such as overgrazing by privately owned sheep and cattle, has caused serious degradation and erosion of the land and increased biodiversity losses in the country. Other causes are the lack of availability of current information on rare and endangered species and, therefore, protection for some endangered species, lack of joint implementation of activities with other sectors in the efforts to support biodiversity conservation, and lack of public awareness.

Nor does MENR participate fully in such international processes as the Convention on Biological Diversity or pan-European processes like the Pan European Biological and Landscape Diversity Strategy (PEBLDS), ForestEurope (previously MCPFE) and the UNECE/FAO European Forestry Commission. Although it has submitted some reports, it would be essential for the Ministry to follow some of the key biodiversity and forestry discussions and negotiations in order to participate in the decision-making and priority-setting meetings of these processes.

Furthermore, these international and pan-European processes engage in capacity-building, institutional strengthening and training activities that could help Azerbaijan keep up to date with the state of the art. These are also key platforms in which to show the advances made in the country and disseminate information on national activities and achievements.

The Red Data Book of Azerbaijan was published in 1989. Twenty-one years later and after several decrees promulgated to guide the work on the production of a new Red Data Book for Azerbaijan, there is still uncertainty about its publication. In the meantime, there is a lack of a public inventory on the status of vulnerable, endangered and critically endangered species of flora and fauna of Azerbaijan.

Recommendation 9.1:

The Ministry of Ecology and Natural Resources should finalize the Red Data Book and identify those species most in need of conservation attention to be able to preserve the unique biological diversity endowment of Azerbaijan and to reduce global extinction rates.

The 2006–2009 National Biodiversity Strategy and Action Plan (NBSAP) has concluded, and at this moment there is no coordinated biodiversity strategy to refer to when new activities are proposed or a presidential decree is adopted. It took three years to approve the previous NBSAP, and it would be extremely detrimental to biodiversity in Azerbaijan if there were no policy framework until 2013.

Recommendation 9.2:

The Ministry of Ecology and Natural Resources should:

- (a) *Evaluate shortcomings in the implementation of the 2006–2009 National Biodiversity Strategy and Action Plan*
- (b) *Make the resulting documents publicly available, while making every effort to identify and address possible information gaps that existed in the past*
- (c) *Based on these evaluations, prepare in cooperation with relevant stakeholders a national biodiversity strategy and action plan to be submitted to the Government for approval. The national biodiversity strategy and action plan will:*
 - (i) *Have a greater focus on conservation of biodiversity outside of protected areas, particularly on lands under agricultural use, as well as on sustainable use of the components of biological diversity and the equitable sharing of benefits arising out of*

- the utilization of genetic resources;*
- (ii) *Define responsibilities to and seek synergies with other sectors and stakeholders in order to enhance their participation in forest conservation, protected area management, and the conservation and sustainable use of biodiversity;*

The Ministry of Ecology and Natural Resources should ensure that appropriate financial resources for the national biodiversity strategy and action plan are allocated under the budget system.

The establishment of protected areas has required large investments on the part of the people and the Government. These investments are worthwhile, especially in view that the protected areas have as a major objective the protection of rare, endangered and endemic species for the benefit of future generations at the national, regional and global levels. Another goal of the protected areas is the development of tourism in the national parks, which could also attract much-needed revenues and employment to the surrounding local communities. However, it is difficult to achieve conservation and sustainable tourism goals without good management of the protected areas. No management plans have been developed, apart from Hirkan National Park, which has had a management plan approved and Shah Dagh National Park, which has one in the pipeline. Management plans could be very costly to produce. A number of international organizations, such as IUCN-The World Conservation Union, have extensive experience in developing guidelines for management of different categories of protected areas.

Recommendation 9.3:

The Ministry of Ecology and Natural Resources should:

- (a) *Start developing management plans for the national parks by using the experience acquired*

during the development of the concluded management plans and guidelines for management of different categories of protected areas;

- (b) *Provide training and build capacity of local experts to implement national park management plans.*

Many countries in Europe have put in place a National Forestry Programme (NFP), which is encouraged at the international and regional levels. FOREST EUROPE (Ministerial Conference for the Protection of Forests in Europe-MCPFE), the pan-European forestry process, promotes the adoption of NFPs and carries out a number of capacity-building and training exercises, in addition to developing common strategies for sustainable forest management in Europe. The countries in Europe, including Azerbaijan, have committed themselves to applying sustainable forest management principles by using the comprehensive and safe means and instruments elaborated by FOREST EUROPE. These include policy and operational-level guidelines, as well as principles for developing, implementing and evaluating national forest programmes.

There is low coverage of forests in the country and a lack of commercial wood production. The forests in Azerbaijan provide a number of ecosystem services that have to be taken into account in national planning.

Recommendation 9.4:

The Ministry of Ecology and Natural Resources should, as a matter of priority, set the objectives and goals for the forestry sector; implement sustainable forest management principles, and develop a national forestry programme in order to fulfil the important objective of increasing forest area to be submitted for approval to the Government.

ANNEXES

***ANNEX I-A: VALID RECOMMENDATIONS FROM
THE FIRST ENVIRONMENTAL PERFORMANCE
REVIEW NOT COVERED IN SECOND EPR CHAPTERS***

***ANNEX I-B: IMPLEMENTATION OF THE
RECOMMENDATIONS IN THE FIRST REVIEW***

***ANNEX II: SELECTED REGIONAL AND GLOBAL
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ENVIRONMENTAL INDICATORS***

***ANNEX IV: LIST OF MAJOR ENVIRONMENT-
RELATED LEGISLATION IN AZERBAIJAN***

Annex I-A

VALID RECOMMENDATIONS FROM THE FIRST ENVIRONMENTAL PERFORMANCE REVIEW NOT COVERED IN SECOND EPR CHAPTERS*

CHAPTER 10: Land use, agriculture and desertification

The difficult social and economic problems are the main reason why farmers pay little attention to environmental issues. Even a severe threat to their future production capacity such as erosion is not given enough attention. Where there are no alternative energy sources to firewood, even forests planted to protect against erosion are being cut.

Land degradation is one of the most serious environmental issues in Azerbaijan. Processes such as erosion and desertification seem to be accelerating, which is distressing as they are to a large degree irreversible.

The Ministry of Agriculture, the Ministry of Ecology and Natural Resources, the State Committee for Land and Cartography, and the State Committee for Amelioration and Water Management are the four national authorities responsible for different aspects of agricultural policy and land management. Overlapping functions between these authorities and unclear mandates make decision-making and implementation of decisions related to land management difficult. As a result the very limited financial and human resources are used inefficiently. It is essential that each authority should have its own specific role and responsibility.

One option is to give the Ministry of Ecology and Natural Resources overall responsibility for planning and control with regard to land use and land conservation, to focus the responsibility of the State Committee for Land and Cartography on land markets and transactions, mapping and cadastres, and to merge the Ministry of Agriculture with the State Committee for Amelioration and Water Management. The merged ministry's main tasks would be to develop sustainable agriculture, agricultural markets, food security and services to the sector. The use of agricultural land and the development of irrigation would be important responsibilities for this new ministry.

In a reformed system of land management, it is important to involve and give more responsibility to the rayon, municipal and community levels. On the rayon level the different agencies involved should be made to cooperate under the governor. The municipal level, already important, could be even more influential.

Recommendation 10.1:

The Cabinet of Ministers should appoint an interministerial working group to review and rationalize the responsibilities for land management of the Ministry of Ecology and Natural Resources, the Ministry of Agriculture, the State Committee for Land and Cartography and the State Committee for Amelioration and Water Management as well as the rayon and municipal authorities. Among the issues to be resolved are the following:

- *Assignment of responsibility for an information system on land and land degradation; and*
- *Development of a strategy for land conservation and sustainable land use.*

It is understandable that environmental issues are not the primary focus of attention for the rural population and the farmers. The rural population may be more or less compelled to overexploit forests and pastures for their

* Following the decision of the EPR Expert Group, this annex contains parts of the recommendations, that are still valid, and their preceding conclusions from the first Environmental Performance Review of Azerbaijan that have not been covered in the preceding chapters of this EPR.

subsistence. This is the reason why, also from an environmental perspective, it is important now to support the general development of the agricultural sector and the rural economy.

Azerbaijan has been quite successful in organizing extension services, which are a key instrument in the development of agricultural production. Farmers need support in their new role as independent farmers to find ways to earn a living and to develop their production. Some printed information material has been developed and distributed, but more needs to be done. Institutions in direct contact with farmers are the rayon offices of the Ministry of Agriculture, agricultural institutes, the 10 regional agro-scientific centres recently established by the Ministry of Agriculture, and NGOs. Private sector advisory services are also being set up in the framework of a World Bank project. The efforts made to develop the possibilities for farmers to get information and training are positive, but should be strengthened.

Recommendation 10.5:

The Ministry of Agriculture, in the longer term, should encourage the extension services to implement codes of good agricultural practices, including supporting the farmers to establish nitrogen management plans or apply integrated pest management. In this respect it is important to have a scientific basis and to make efforts to safeguard basic needs.

CHAPTER 12: Human health and environment

On top of ensuring compliance with norms and technical standards, experts should also engage in a critical appraisal of the overall monitoring system, and its functions, with a view to ensuring that the system serves the protection of public health in the most cost-effective and efficient way, taking into account also the latest international developments in the area. Improvement in this field would entail a thorough review of existing norms and standards and an in-depth revision of the monitoring procedures and the possibility to establish links between data related to the quality of water, food and other environment-related conditions with data coming from epidemiological and morbidity surveillance systems.

In addition, the rationalization of the monitoring system (e.g. by reducing the number of parameters to be monitored to those which are most relevant for public health protection) would help to concentrate resources on building capacity, upgrading monitoring and laboratory equipment, and improving analytical capacity only in selected areas.

Recommendation 12.3:

- (a) The Ministry of Health, in cooperation with the Ministry of Ecology and Natural Resources, should develop a strategy for the overall monitoring of environmental samples and disease surveillance that enables an evidence-based approach to associating environmental status with impact on human health. This should be carried out in collaboration with WHO and other international organizations or bilateral donors to ensure coherence with international standards and practices.*
- (b) In particular, national legislation on quality assurance standards should be reviewed and adjusted, and existing overlaps and duplications, e.g. in relation to environmental monitoring responsibilities, should be assessed and removed (e.g. in air quality monitoring).*

There is a need to improve the monitoring laboratories' analytical capacity and their adherence to quality assurance standards. At the same time, there are needs to upgrade the equipment of State and local laboratories, and to secure funds for the maintenance of this equipment. Consideration should be given to the possibility of partially recovering the cost of laboratory upgrades and equipment maintenance by providing value-added services, such as high-quality and sophisticated analyses, for a fee (e.g. to companies that may find it attractive to have their products analysed or certified without investing capital in developing in-house facilities to that end). This could also lead to the establishment of some analytical centres of excellence, where the initial investments in analytical equipment would ensure that the facility is used at full capacity and that the staff become highly competent. National monitoring and surveillance systems would be strengthened, and laboratory confirmation levels of clinical samples would be improved. This can be achieved by training the experts of the sanitary epidemiological services.

Support for the work of the National Department of Environmental Monitoring would go a long way to improving public health provided that internationally standardized monitoring equipment is in place with a view to linking its findings with both ecological and health data, and orienting the service towards surveillance of priority environment-related diseases. For example, while reductions in the rates of acute intestinal infections remain a challenge, a major effort should go into improving their detection by strengthening laboratory capacity.

Recommendation 12.4:

- (a) *The Ministry of Health should revise the health information system in the light of the policy objectives to be achieved and of the supportive analysis to be performed.*
- (b) *The Ministry of Health should develop indicators and establish and maintain rigorous procedures to ensure quality control and inter-laboratory comparability of results. The Sanitary Epidemiological Service could play a central role in developing and making available this capacity to local laboratories. It should also assess the possibility of developing partnerships with donors (e.g. international development agencies, foundations) to finance better laboratory facilities and technical capacity.*
- (c) *The Ministry of Health should continue to direct major efforts towards building the appropriate infrastructure and capacity in health professions dealing with the primary collection and management of health statistics. This should be carried out in line with the above recommendation, and to the extent possible within the framework of international collaboration and support. High priority should be given to investing in a transition from a manual to an electronic system for the collection, storage, transmission and processing of health data.*
- (d) *The possibility of developing partnerships and agreements with other key bodies, such as the Ministry of Ecology and Natural Resources, should also be considered for sharing information.*

The experience of WHO with the development of a core set of indicators for environmental health monitoring could represent a useful starting point to map out data requirements and their sources, and to assess feasibility issues related to the implementation of such a system.

Research in environment and health-related matters would greatly benefit from greater interactions with the international scientific community, including for the development of possible partnerships and the identification of resources for strengthening the capacity of researchers in preparing robust research proposals, addressing relevant research questions, conducting and managing research, and presenting its results according to established international quality standards and procedures.

Recommendation 12.5:

The Ministry of Health should encourage and support the Scientific Research Institute in strengthening its international outreach and capacity to build partnerships for conducting and funding research. The submission of research results to scientific peer-reviewed international journals should be strongly encouraged, as should the identification of potential international partners and donors to support research activities. This should be accompanied by further developing researchers' professional skills, including through the development of exchange programmes with other scientific institutions.

The issue of safe water supply and adequate sanitation remains a challenge, both in Baku and in the rest of the country, and poses a major threat to health through increased risks of water-related diseases. The fact that only the most affluent can afford bottled water or filters also raises issues of social equity. The Ministry of Health could play an important role in advocacy and development of preventive strategies, in addition to maintaining its responsibilities in the control of drinking and recreational water quality.

Recommendation 12.6:

The Ministry of Health should take advantage of opportunities provided by being a Party to the Protocol on Water and Health to develop partnerships with other relevant ministries and bodies and advocate the implementation of the policy recommendations set out in the Protocol, with a view to developing a comprehensive approach to water supply and sanitation, i.e. source protection, treatment and distribution of water; and disposal of human waste and waste water.

Radioactive contamination by low specific activity scales in residential areas in the vicinity of oil fields is raising concerns of a possible increased risk of leukaemia and other ionizing radiation-related diseases in the local population, and in particular in children. These concerns, however, have not yet been fully investigated.

Recommendation 12.7:

The Ministry of Health, e.g. through the Scientific Research Institute, and with WHO assistance, should support the efforts of the Radiation Medicine Department in investigating the possible health effects resulting from exposure to radioactivity from low specific activity (LSA) scales in residential areas in the vicinity of oil field.

In spite of some localized initiatives, which are aimed at the separate collection and incineration of medical waste, in the vast majority of urban and rural areas medical waste is disposed of together with municipal waste, potentially causing microbiological and chemical contamination.

Recommendation 12.8:

The Ministry of Health should work with the Ministry of Ecology and Natural Resources to revise present practices for the safe disposal of medical waste. Positive experiences developed in some health facilities (e.g. the separate collection of sharp materials in some hospitals in Baku) should be extended. The use of safe incinerating units should also be considered, as an alternative to landfilling, and criteria for the selection and operation of safe incinerators should be developed based on experience gained from existing programmes.

Annex I-B

IMPLEMENTATION OF THE RECOMMENDATIONS IN THE FIRST REVIEW*

PART I: THE FRAMEWORK FOR ENVIRONMENTAL POLICY AND MANAGEMENT

CHAPTER 1: Policy, legal and institutional framework

Recommendation 1.1:

The Ministry of Ecology and Natural Resources, in consultation with other relevant institutions, should prepare and submit through Parliament or to the President, an implementation programme for a continuing process of policy-making for environment and sustainable development. This programme should provide an overall framework for policy; establish a schedule for monitoring, reviewing and revising policies; and indicate the relationship and hierarchy among policies. The programme should be of a multi-sector nature, and not be limited to only the obligations of the Ministry of Ecology and Natural Resources. To the extent possible, it should also specify sources of financing for implementation.

Azerbaijan has not made adequate progress as far as continuity is concerned. A first State Programme on Poverty Reduction and Sustainable Development for the period 2003–2005 was adopted. The country experienced a period of discontinuity between 2006 and 2008. The new State Programme on Poverty Reduction and Sustainable Development for the period 2008–2015 was adopted and will be implemented.

Recommendation 1.2:

The Ministry of Ecology and Natural Resources should continue and finalize its “gap analysis” of Azerbaijan’s environmental legislation, with particular reference to the Partnership and Cooperation Agreement with the European Union and other internationally adopted principles. Conclusions of this analysis would provide the basis for the development of a Plan for Legislative Work in the Environmental Sector, together with the Milli Mejlis Commission on Environment and other stakeholders, especially national nongovernmental organizations. The Plan should avoid being overambitious, and should take a step-by-step approach, sufficiently supported by growing human and financial resources throughout its implementation.

The Government approved the Plan of Actions on Approximation of Legislation with that of the European Union for the period 2007–2010, which compares EU and national legislation. Many EU directives in environmental areas have already been translated into Azeri. There is no evidence that a plan for legislative work in the environmental sector has been developed or approved.

Recommendation 1.3:

The Ministry of Ecology and Natural Resources should undertake the following:

- (a) *Redesign the system of Ecological Expertise with environmental impact assessment legislation based on international experience and practices, with clear guidelines regarding screening and scoping procedures; initial steps towards decentralized decision-making in this area should be planned for the mid-term;*
- (b) *Develop separate legislation for Strategic Environmental Assessment (SEA), which applies to a higher stage of national planning and requires a higher degree of coordination.*

This recommendation has not been fulfilled by Azerbaijan.

* The first review of Azerbaijan was carried out in 2003 and published in 2004. During the second review, progress in the implementation of the recommendations in the first review was assessed by the EPR Team based on information provided by the country.

Compared with 2003, the system of State ecological expertise and its legislative framework in Azerbaijan have not undergone any significant changes. The environmental impact assessment (EIA) is still being carried out on the basis of a 1996 guidance document, albeit approved by Order of the Ministry of Ecology and Natural Resources (MENR), but not legally binding. Nevertheless, national legislation does not provide clear criteria or a list of activities that would make it possible to determine whether or not a given project is subject to environmental impact assessment.

In Azerbaijan, the decision-making system on environmental aspects of new public and private projects remains highly centralized. Many decisions on such projects are taken directly by the President or the Cabinet of Ministers, and in such a situation the opinion of the State ecological expertise often becomes a mere formality. The system of decision-making related to the State ecological expertise and environmental impact assessment within the Ministry of Ecology and Natural Resources is also strictly centralized, i.e. decisions on almost all issues are made by employees of the State Expertise Administration based in Baku.

Over the period under review, Azerbaijan neither developed nor adopted separate legislation on strategic environmental assessment, as a result of which the relevant provisions in the Law on the Protection of Nature and Nature Use have remained unchanged.

In 2009, the Environmental Centre under the Ministry of Ecology and Natural Resources developed a draft Law on Ecological Expertise and EIA Regulations. These two documents are currently being approved by various ministries. However, it is too early to assess the possible outcome of this initiative.

Recommendation 1.4:

The Ministry of Ecology and Natural Resources should restructure the State Control Inspectorate for Environment and Natural Resources (SCI), in an effort to:

- (a) Consolidate central and regional inspections into a single system, with clear rules of procedure and differentiation of responsibilities. This would include placing the regional inspection functions under the State Control Inspectorate and removing them from the Ministry's Department of Environmental Policy and Environment Protection. The restructuring process should also evaluate the relationship between regional inspectors for environment and those for health; (see also Recommendation 12.1)*
- (b) Provide greater autonomy to the State Control Inspectorate and sufficient resources for it effectively to carry out its work; and*
- (c) Strengthen the capacity of the State Control Inspectorate for Environment through intensive training of inspectors and through the implementation of a national standardized and mandatory recruitment exam for all inspectors.*

This recommendation was partially fulfilled by Azerbaijan.

Currently, the main functions related to environmental compliance and enforcement are concentrated in the Department for Environmental Protection under the Ministry of Ecology and Natural Resources. Thus, to some extent there was a consolidation of inspection functions within the framework of one department - the Department for Environmental Protection, but not the State Control Inspectorate. Also, there are sectors dealing with law enforcement within the following departments of the Ministry of Ecology and Natural Resources:

- (a) Department of Biological Diversity Protection and Specially Protected Nature Areas Development
- (b) Department for Reproduction and Protection of Aquatic Bioresources
- (c) Fishery Department

Within the framework of the slightly modified MENR structure, there were no significant changes compared with 2003 in terms of granting more autonomy to the environmental inspectors. Moreover, according to most of the inspectors interviewed, no significant progress was made in terms of funding their activities.

Activities aimed at enhancing capacity remain at a very low level within MENR. The interviews conducted and the documents studied in the course of the UNECE mission on the second environmental performance review in Azerbaijan did not reveal any system of education and training of environmental inspectors. Moreover, MENR does not conduct any tests when hiring environmental inspectors.

Recommendation 1.5:

The Ministry of Ecology and Natural Resources should assess the entire national framework for compliance and enforcement, with the aim of developing and implementing a well-articulated enforcement strategy, which should, inter alia:

- (a) *Identify the weaknesses in the present system of compliance and enforcement (e.g. absence of procedural documents, overlapping of responsibilities of various agencies, low level of financing and motivation, outdated standard and payment-setting approaches, inadequate court proceedings) and prepare a list of legislative and institutional measures to address these problems. This list should form the nucleus of an action plan;*

This recommendation has not been fulfilled.

- (a) During the UNECE mission on the second environmental performance review, no system for assessing the performance of environmental inspectors was brought to light. Key indicators for reporting and evaluation of work of environmental inspection services in Azerbaijan are still the number of inspection checks conducted, the amounts of the fines collected and compensation for environmental damage. As before, in Azerbaijan there is no clearly defined strategy for ensuring compliance with and enforcement of environmental legislation. The analysis of reports on the results of inspections and enforcement on the merits is not carried out; only a mere set of data is being kept and subsequently submitted to the Ministry of Ecology and Natural Resources; in addition, certain data are submitted to the State Committee on Statistics by the Department for Environmental Protection (statistical reporting form “nature protection – 1”).
- (b) In general, it was not possible to establish a clear link between the developing legislative and institutional measures on environmental protection and natural resources and activities ensuring compliance with and enforcement of existing environmental legislation carried out by inspectors. Also according to the interviewed environmental inspectors, they practically do not participate in the discussion of new laws and regulations of environmental legislation.

CHAPTER 2: Economic instruments, environmental expenditures and privatization

Recommendation 2.1:

The Ministry of Ecology and Natural Resources should improve the management of the State Environmental Protection Fund by addressing its accountability, transparency, cost-effectiveness and environmental effectiveness. The creation of an advisory board for the Fund with the participation of all interested parties, including the environmental NGO community, should be considered.

There have been no major reforms in the management of the State Environmental Protection Fund. No Advisory Board has been set up. However, the resources managed by the Fund are rather small in comparison with the overall means available to MENR.

Recommendation 2.2:

- (a) *The Ministry of Ecology and Natural Resources jointly with the Ministries of Economic Development, of Taxes and of Finance should:*
 - (i) *Develop incentives for the public sector to effectively leverage private and foreign finance for the environment; and*
 - (ii) *Build the capacity of the executive powers and municipalities to prepare environmental projects that can be co-financed on commercial terms.*
- (b) *The Ministry of Ecology and Natural Resources should be involved in the decision-making in the privatization process to promote environmental investments by the new enterprise owners.*

Commercial participation in environmental protection activities is still limited, although public demand for environmental services has encouraged private sector provision. MENR is represented on the commissions set up to decide on the privatization of specific companies, in order to ensure that environmental legislation is properly observed. No additional obligations or special conditions apply to these companies.

Recommendation 2.3:

- (a) *The Ministry of Ecology and Natural Resources should develop a project portfolio aimed at solving priority environmental problems for submission to prospective donors. Projects should link environmental objectives with poverty reduction, local social and economic development, and strengthening governance. Beneficiaries should be directly involved in both project negotiation and implementation.*
- (b) *The Ministry of Ecology and Natural Resources should also enter into discussions with the Ministry of Finance to prepare expenditure programmes, aimed at solving specific environmental problems, which are not only national but are above all international priorities (e.g. global or Transboundary environmental problems).*

The role of international donors is contemplated in development plans, in particular regarding water supply and sanitation and waste. Azerbaijan is working with a number of bilateral and multilateral donors in these areas, including the World Bank and the Asian Development Bank (ADB). However, environmental programmes often lack detail regarding expenditure commitments and the concrete role that international financing may play.

Recommendation 2.4:

The Cabinet of Ministers should proceed with the gradual elimination of environmentally harmful subsidies, starting with the energy sector using the UNECE Guidelines on Reforming Energy Pricing and Subsidies, which were endorsed at the Kiev Ministerial Conference “Environment for Europe” in 2003. The executive powers and municipalities should improve the collection of payments for water consumption and for municipal waste collection and disposal. This measure should be accompanied with a stepwise increase in tariffs to make the respective services self-financing.

Very significant progress has been observed in this area. Energy subsidies granted by the State Oil Company of Azerbaijan Republic (SOCAR) have been eliminated, utilities tariffs have increased and collection rates have improved markedly.

Recommendation 2.5:

The Ministry of Ecology and Natural Resources should initiate a reform of environmental charges, fees, fines and compensation. This should involve, in particular, raising relevant rates to a level that would provide incentives to prevent or reduce pollution and the misuse of natural resources, and increase revenue substantively.

There have been no reforms in the system of pollution charges since the first EPR issued in 2004.

CHAPTER 3: Environmental information and public participation

Recommendation 3.1:

The Ministry of Ecology and Natural Resources should consolidate further the role of its National Department of Environmental Monitoring as lead environmental monitoring agency responsible for core monitoring activities and coordination with all other administrations, research institutes, regional environmental centres and NGOs, collecting and processing environmental data. A merger of the Caspian Complex Environmental Monitoring Department and the National Department for Environmental Monitoring (NDEM), and the transfer of hydrometeorological laboratories to NDEM could be considered, among other measures.

A centre on environmental monitoring data was established in NDEM. The centre developed monitoring reporting forms that public institutions that are conducting environmental monitoring regularly complete and return to the centre. In 2007, MENR, by virtue of its decree No. 610/u of 8 November 2007, approved a form for submission by its regional departments of information on environmental conditions. Accordingly, each department submits to NDEM quarterly reports covering sources of air and water pollution and of waste generation in the region, quantitative and qualitative parameters of emissions, and state of land and biological resources.

Recommendation 3.2:

- (a) *The Cabinet of Ministers should establish an institutional structure for inter-ministerial cooperation and coordination on environmental monitoring and information with the Ministry of Ecology and Natural Resources having the leading role.*
- (b) *The development of a State system of integrated environmental monitoring and the preparation of a regular governmental report on the state and the protection of the environment should be core responsibilities of this structure (commission), which should be supported by a network of experts responsible for specific monitoring and information activities.*

In its resolution No. 90 of 1 July 2004, the Cabinet of Ministers approved the statute on Rules of Conducting Monitoring of the Environment and Natural Resources. The statute established goals and basic requirements, e.g. frequency and number of observation points, for 12 types of monitoring. There are no institutional structures or formal arrangements in Azerbaijan for coordination of monitoring and environmental data collection activities run by various institutions. Azerbaijan does not publish a state-of-the-environment report.

Recommendation 3.3:

- (a) *The Ministry of Ecology and Natural Resources, when finalizing the State programme for strengthening environmental monitoring for submission to the Cabinet of Ministers, should include a detailed assessment (including cost assessment) of the investment requirements in basic environmental monitoring infrastructure, in particular in raw data collection, analytical and processing capacities, and equipment.*
- (b) *The programme should also establish a clear perspective of extending monitoring activities, step-by-step, to soil, waste, biodiversity, and chemicals in ecosystems and foodstuffs to ensure integrated data collection covering quality, quantity, biodiversity and ecosystem aspects from the outset.*

According to the Plan for Implementation of Integrated Measures to Improve Environmental Conditions for 2006-2010, approved by Presidential Decree No. 1697 of 28 September 2006, the procurement of the equipment is underway for five automated monitoring stations to be installed in the capital city. In 2009, under a technical cooperation agreement with the International Atomic Energy Agency (IAEA), Azerbaijan established an automated system to monitor background radioactivity in border areas. Since 2002, inventories have been launched in forestry management units, one by one. In 2004, the Scientific and Research Fishery Institute resumed annual marine expeditions in the Azerbaijan segment of the Caspian Sea. Analytical laboratory equipment of NDEM and the Caspian Complex Environmental Monitoring Administration has been renewed with the support from international projects. A one-off contribution amounting to 260,000 manats was provided from the State budget for strengthening NDEM laboratories in 2005. In 2010, NDEM expected to receive funds from the State budget to acquire a mobile analytical laboratory.

Recommendation 3.4:

The Ministry of Ecology and Natural Resources should draft legislation making polluting enterprises responsible for monitoring their emissions and waste flows. It should also provide companies with guidance and incentives for voluntary reporting on their environmental performance.

Resolution No. 90 of the Cabinet of Ministers dated 1 July 2004 on the Approval of the Statute on Rules of Conducting Monitoring of the Environment and Natural Resources obliges the users of natural resources to report the results of their self-monitoring to MENR. However, no reporting forms for enterprises have been developed, as a result of which there is no enterprise self-monitoring reporting to environmental authorities in Azerbaijan.

Recommendation 3.5:

The Ministry of Ecology and Natural Resources, the State Statistical Committee, the Ministry of Health and the State Committee of Amelioration and Water Management should make environmental data, including environmental health data, collected with public funds freely available. They should make every effort to raise external funds, if necessary, to produce compact, easy-to-read products such as booklets presenting key environmental data, indicator reports and thematic leaflets or brochures, and to make them available on the Internet.

MENR regularly updates its website and produces information leaflets and posters for the general public and press releases. In addition to an Aarhus Information Centre in Baku, two similar centres were established in

Ganja and Gazakh. The Ministry of Health regularly uploads onto its website information on health and the environment. However, Azerbaijan does not publish indicator reports.

Recommendation 3.6:

- (a) *The Cabinet of Ministers should issue regulations supplementing existing laws to ensure that unambiguous and detailed procedures are in place guaranteeing public access to environmental information, public participation and access to justice on environmental issues to comply fully with the Aarhus Convention.*
- (b) *These regulations should also simplify the registration procedure for environmental NGOs*

Two new laws that entered into force in 2005 supplemented the national legislation on public access to environmental information and on public participation in environmental decision-making. The 2005 Law on Access to Information, No. 1024-IIQ, provides the public with broad opportunities to access to information. The 2005 Law on Public Administration facilitates public access to information and public participation in decision-making. The Concept of State Support to NGOs was approved by the President on 27 July in 2007, and aims to form a stable and effective system of cooperative relations between public authorities and NGOs, to involve NGOs in resolving problems that were considered important for the development of the State and society, and to accelerate the development of civil society. On 30 June 2009, the Milli Mejlis adopted amendments to the Laws on Non-Governmental Organizations and on Grants. The amendments introduced some restrictions on NGO activities.

Recommendation 3.7:

The Ministry of Ecology and Natural Resources should establish a consultative body and procedure at the ministry with broad participation of national environmental NGOs in the development of environmental legislation, programmes and plans.

MENR invites representatives of selected NGOs to round-table discussions on key national environmental problems. Four such meetings were organized in 2009 at the NGOs' initiative and two meetings in early 2010. MENR organized round tables with NGOs on "Environmental Challenges of the Caspian Sea", "Sustainable Use of Water Resources and Protection of Water Bodies from Pollution", "Protection of the Ozone Layer", "The Caspian Sea is the Largest Lake of the World" and other topics. NGO representatives participate in the work of expert commissions established at the Ministry. MENR, meanwhile, did not establish a Consultative NGO Council at the Ministry.

CHAPTER 4: International cooperation

Recommendation 4.1:

- (a) *The Cabinet of Ministers should give high priority to the implementation, compliance with and enforcement of international conventions and national laws by developing and putting in practice national environmental norms and standards, instructions and practical action plans following existing international commitments.*
 - (b) *The Ministry of Ecology and Natural Resources should assess the cost of implementation of a new international legal instrument for environmental protection before ratification in order to acquire the necessary resources.*
- (a) The 2006 Presidential Decree on Implementation of International Conventions includes an action plan for implementing the provisions of the MEAs. Additionally, Azerbaijan has adopted a number of sector strategies and action plans related to the implementation of international conventions (e.g. the National Strategy and Action Plan on Conservation and Sustainable Use of Biodiversity, State Strategy for Hazardous Waste Management, the Hydrometeorology Development Program) or is in the process of doing so (e.g. the Strategy on Adaptation and Mitigation of Climate Change, the National Action Plan on Desertification). Some of the norms, standards or instructions established include the Rules on Regulation of International Trade for Customs Officers under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) or planned standards for storing hazardous waste. However, further work is needed in various areas in order to put international conventions and related national laws in practice.

MENR is of the view that the Cabinet of Ministers should attach greater importance to the implementation of international treaties, which finds its expression e.g. in the establishment of a separate division dealing with environmental topics within the Cabinet of Ministers, previously part of a Division on Agriculture and Environment.

- (b) The recommendation has not been implemented. The acquirement of the respective financial resources for implementing a new legal instrument has not been seen as a problem due to increased Government spending in the area of environment.

Recommendation 4.2:

The Ministry of Ecology and Natural Resources should:

- *Speed up the development of a new law on the movement of hazardous waste based on the provisions of the Basel Convention;*
- *Set up the inventory of hazardous waste;*
- *Finalize the development of a classification system for hazardous waste based on the Basel Convention;*
- *Set up a database on the export, import and movement of hazardous waste in the country and*
- *Develop a permitting system for hazardous waste.*

The 1998 Law on Industrial and Municipal Waste was amended in 2007 and various resolutions were issued by the Cabinet of Ministers in order to comply with the provisions of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. A 2008 Resolution of the Cabinet of Ministers set rules for an inventory of industrial waste according to the Basel Convention classification, but a full inventory of hazardous waste has not yet been undertaken. The classification system according to the Basel Convention has been partially introduced by MENR, but the older classification is still in place and the State Statistical Committee intends to introduce the EU classification system, which will lead to confusion. A database on the export, import and movement of hazardous waste has been established. Azerbaijan does not issue permits, but makes frequent inspections to check adherence to the respective laws.

Recommendation 4.3:

The State Committee for Amelioration and Water Management, in cooperation with the Ministry of Ecology and Natural Resources, and in consultation with the appropriate authorities of the other riparian countries, should take steps to establish an intergovernmental working group composed of high representatives of the riparian countries of the Kura and Araz rivers (Armenia, Azerbaijan, Georgia, Islamic Republic of Iran and Turkey) to cooperate on the sustainable management of these rivers. The intergovernmental working group should coordinate all projects, plans and development affecting water quality and quantity in the Kura and Araz rivers.

The proposed working group has not been established. However, Azerbaijan has made substantial efforts to convince other riparian countries to the Kura and Araz rivers to ratify the Convention on the Protection and Use of Transboundary Watercourses and International Lakes in order to come to an agreement.

PART II: MANAGEMENT OF POLLUTION AND OF NATURAL RESOURCES

CHAPTER 5: Air management and transport

Recommendation 5.1:

(a) *The Ministry of Ecology and Natural Resources should as soon as possible, undertake the necessary actions to implement the regulations for the Law on Air Protection, in order to enforce air protection legislation in Azerbaijan.*

(b) *Consistent with the new Law on Air Protection, the Ministry of Ecology and Natural Resources, together with the Ministry of Health, should adopt and implement new air quality standards and emission standards for stationary sources. The air quality standards should be in line with WHO air quality guidelines. The necessary training, equipment and financial resources should be made available to facilitate the transfer to these new standards.*

Implementation has not yet begun.

Recommendation 5.2:

- (a) *The Ministry of Transport, in cooperation with the Ministry of Ecology and Natural Resources, should develop a sustainable transport strategy that fully incorporates environmental considerations. The strategy should address the traffic problems of air pollution and congestion in major cities with the appropriate measures.*
- (b) *The Ministry of Ecology and Natural Resources, together with the Ministry of Internal Affairs and its State Traffic Police, should use resources from the State budget and other environmental funds to set up an effective vehicle inspection and maintenance programme in order to achieve emission reductions from the privately owned vehicle fleet. As part of this programme, service and repair facilities with good diagnostic equipment and qualified technicians should be established.*

Implementation is ongoing. The Ministry of Transport has started introducing measures to improve the transport system in Baku (Intelligent Transport System, extension of metro lines, building of new parking places and completion of the city bypass).

Recommendation 5.3:

- (a) *The Ministry of Transport, in cooperation with the Ministry of Ecology and Natural Resources, should develop, adopt and implement new emission standards for new mobile sources according to relevant European Union emission standards (Euro standards). In addition, adequate vehicle emission control schemes should be set up to check compliance with these standards.*
- (b) *The Ministry of Fuel and Energy, in cooperation with the Ministry of Ecology and Natural Resources should adopt and implement, step by step, new fuel quality standards. Adequate fuel quality schemes should be set up to control the content of sulphur in diesel fuel and the content of lead in petrol fuel.*

Implementation is ongoing. After 1 July 2010, licensing of vehicles for business purposes will only be possible for those complying EURO 2 standards or higher. The current quality of fuels is at the EURO 2 level, but it is expected that the EURO 5 level will be achieved by 2015.

Recommendation 5.4:

- (a) *The Ministry of Ecology and Natural Resources, together with the Ministry of Health, should gradually establish a system of continuous monitoring of the six "classical" pollutants (lead, PM 2.5/PM10, carbon monoxide, sulphur dioxide, nitrogen dioxide, ozone), to permit direct comparison with international guidelines and standards.*
- (b) *The Ministry of Ecology and Natural Resources should start submitting complete air emission inventories as soon as possible, following the methodology of CORINAIR and the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP).*

Eighteen parameters are measured in total in the country. No change in the number of measured parameters has taken place since 2003. Air concentrations of a number of air pollutants identified by the international community as most harmful to human health and the environment – ground-level ozone (O₃), fine particulates (PM_{2.5} and PM₁₀), volatile organic compounds (except Formaldehyde), heavy metals (except Mercury (Hg) and Lead (Pb)) and persistent organic pollutants – are not measured in Azerbaijan. The upcoming five automated monitoring stations in Baku will ensure continuous measurements of SO₂, NO_x, O₃, PM_{2.5} and PM₁₀. Potentially, two additional automatic stations to be located in Sumgayit and a mobile monitoring station will be purchased. The emission inventories in the country do not include all relevant items such as emissions from households and small businesses and emissions from diffused sources. Emissions from transport and from mobile sources are assessed in an overly simplified fashion on the basis of fuel consumption. Emission projections based on modeling are not available.

Recommendation 5.5:

- (a) *The Ministry of Ecology and Natural Resources should develop appropriate strategies for the ratification and implementation of the Protocols to the UNECE Convention on Long-range Transboundary Air Pollution.*

- (b) *The Ministry of Ecology and Natural resources should raise its need to develop air quality monitoring and reporting to address requirements under the Convention with the Executive Body of the Convention, thereby seeking assistance from the Convention's programme centres and from the other Parties to the Convention*
- (a) The protocols under the UNECE Convention on Long-range Transboundary Air Pollution have not been ratified, as work in this area was not a priority. Azerbaijan intends to ratify the protocols in the near future, starting with the Protocol on Heavy Metals.
- (b) There has not been any substantial progress in improving air quality monitoring and reporting, but MENR plans to acquire ten automatic stations in the near future and one EMEP station with the assistance of the Convention on Long-range Transboundary Air Pollution.

CHAPTER 6: Management of waste and contaminated sites

Recommendation 6.1:

- (a) *The Ministry of Ecology and Natural Resources, in cooperation with industry, should further develop the hazardous waste management system, which is currently in its initial stages. It should also include development and improvement of its infrastructure (testing procedures, laboratory practices, standard analytical methods for defining waste composition as well as technical guidelines on waste handling);*
- (b) *The Government should adopt the draft national hazardous waste management strategy as soon as possible. The Ministry of Ecology and Natural Resources should facilitate this process, as appropriate;*
- (c) *The Ministry of Ecology and Natural Resources, in cooperation with other relevant ministries, should develop and implement a new comprehensive law on waste management with relevant regulations and norms.*
- (a) This part of the recommendation has been partially implemented. The hazardous waste system has been strengthened. A hazardous waste landfill has gone into operation at Sumgayit. The laboratory capacities have been improved, although specific testing procedures for hazardous waste have not yet been fully introduced.
- (b) This part of the recommendation has been implemented. The national hazardous waste management strategy was adopted via Resolution No. 117 of the Cabinet of Ministers in 2004.
- (c) This part of the recommendation was implemented. In the period 2004–2008, key hazardous waste management legislative norms were adopted. They are in line with international practice and the Basel Convention.

Recommendation 6.2:

The Ministry of Ecology and Natural Resources, in cooperation with the Ministry of Economic Development and industrial enterprises, should:

- (a) *Conduct environmental audits of functioning industrial enterprises;*
- (b) *Draw up an inventory of abandoned industrial sites and create a database of all industrial waste;*
- (c) *Prepare and implement an action plan for the rehabilitation of oil-contaminated sites by mechanical and/or biological method, including a mechanism for financing;*
- (d) *Make information concerning the threats to health posed by hazardous waste disposal sites readily available to the public;*
- (e) *Ensure that the sites are fully contained and inaccessible to the public.*
- (a) This part of the recommendation was partially implemented, as waste audits (passports) of 34 oil sector companies were submitted to MENR. Work is ongoing for other industrial sectors.
- (b) This part of the recommendation was not implemented. The adoption of a new waste classification system creates the possibility of developing a good database of industrial waste. However, many abandoned industrial sites in and around Baku are being cleaned up and restored.
- (c) This part of the recommendation was implemented. The SOCAR Ecological Centre has mapped and investigated all oil-contaminated sites on Absheron. Already, 300 ha of land were remediated in 2009; an additional 400 ha are expected to be rehabilitated by the end of 2010.

- (d) This part of the recommendation was implemented. Representatives of MENR, the Ministry of Health and the Ministry of Emergency Situations promote involvement of local population and NGOs in awareness-raising actions at several waste sites.
- (e) This part of the recommendation has started to be implemented. The control of access to waste sites was introduced at Balakhany disposal site, Sumgayit hazardous waste site and the pesticide disposal site in Jangi.

Recommendation 6.3:

The executive power of Baku, in cooperation with other institutions involved in radioactive waste management, should:

- (a) *Draw up an inventory of all radioactive sources;*
- (b) *Rehabilitate the IZOTOP centre facility to meet international norms and standards for the environmentally sound disposal of radioactive waste. The long-term sustainability of the IZOTOP centre and maintenance of the plant should be ensured through fees to be charged to private enterprises that use this service. Public entities are expected to receive the service free of charge.*

The recommendation was implemented.

- (a) A detailed inventory of old radioactive materials deposits and a reliable system of monitoring import/export and use of radioactive materials was finalized.
- (b) The IZOTOP facility was fully upgraded to international standards. As it serves both the State and private sector, operating costs are covered by both sources.

Recommendation 6.4:

The Ministry of Ecology and Natural Resources, in cooperation with the Ministry of Agriculture, should conduct an environmental impact assessment of the pesticide storage facility and begin its rehabilitation, ensuring that the storage facility is contained, that there is no leaching into the soil and groundwater and that it can withstand all weather conditions;

The pesticide storage facility was completely rehabilitated and fenced. Pesticides were repacked and buried in covered concrete bunkers.

Recommendation 6.5:

Municipalities, in cooperation with the Ministry of Ecology and Natural Resources, should:

- (a) *Organize awareness-raising campaigns among the population to encourage them to separate recyclable waste;*
 - (b) *Construct facilities for the collection and reprocessing of this waste;*
 - (c) *On a step-by-step basis, construct new sanitary landfills for disposal of municipal waste on the basis of environmental impact assessments;*
 - (d) *In the long term, construct incineration facilities for municipal waste in Baku.*
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- (a) *This part of the recommendation has been partially implemented. Tamiz Shahar (Clean City) Joint Stock Company (JSC) organizes awareness-raising campaigns in Baku. NGOs are also carrying out some waste management activities in other parts of Azerbaijan.*
 - (b) *This part of the recommendation has not yet been implemented. Sorting of waste is currently done manually, only at Balakhany disposal site. There are plans to develop several recycling facilities around Baku.*
 - (c) *This part of the recommendation has been partially implemented. The EIA for Balakhany disposal site was completed. The site has been significantly upgraded. The development of a new site is planned in coordination with the construction of the incinerator. Work on the nationwide network of organized, sanitary landfills has not yet begun.*
 - (d) *The part of the recommendation has been partially implemented. An incinerator with a capacity of 500,000 t/y is under construction, and is scheduled to go into operation in 2012.*

CHAPTER 7: Water management

Recommendation 7.1:

The Ministry of Ecology and Natural Resources and the State Committee of Amelioration and Water Management should coordinate the development of a national strategy for the water sector based on the integrated river basin management principle. Such a strategy should also be agreed upon by other stakeholders. Transboundary initiatives are encouraged in order to pave the way for international cooperation especially within the Kura river basin.

There is still no coordinated national water strategy and river basin management is not being implemented. The municipalities continue to have jurisdiction on the water bodies of local importance, and are responsible for protecting water bodies in their territory and stipulating the amount of water for consumption.

There has been a restructuring of Azersu that became the national water company (with responsibilities in water supply and sanitation throughout the country), which reduced the number of actors in the field and allowed for concentration of information and simplification of procedures.

In addition, the State Committee of Amelioration and Water Management became the Joint Stock Company of Amelioration and Water Economy.

These companies have their objectives and goals, which are discussed with MENR but also with other ministries such as Infrastructure and with the Cabinet of Ministers directly. Within MENR, different departments continue to deal with water issues, not always with fluid communication and articulation among them:

- (a) The Environmental Policy Division monitors policy implementation;
- (b) The Environmental Protection enforces the law;
- (c) The Caspian Complex Environmental Monitoring Department monitors the Caspian Sea's physical and geochemical properties;
- (d) The National Geologic Exploration Service performs groundwater research and monitoring (advisory);
- (e) The Department of State Environmental Expertise issues permits;
- (f) Hydrometeorological services perform forecasts and monitoring on water quantity;

The Environmental Monitoring Service monitors water quality;

- (g) The Ministry of Health monitors water quality for human consumption and bathing water;
- (h) The Department of Bioresources monitors the increase of bioresources in water bodies and manages fisheries in the Caspian Sea.

There are ongoing negotiations with Georgia, and in 2007, a Memorandum of Understanding was signed between the Ministry of Ecology and Natural Resources of Azerbaijan and the Ministry of Environment Protection and Natural Resources of Georgia, providing for the establishment of working groups with the objective of exchanging monitoring information, protecting and using transboundary waters and developing a joint programme in this area. Although direct negotiations with Armenia cannot yet take place at the political level, international organizations initiatives have made technical cooperation possible.

Recommendation 7.2:

The Ministry of Ecology and Natural Resources, the Committee of Amelioration and Water Management, the water utilities and the water users should give high priority to reducing the high water losses in water-supply and irrigation systems. For this purpose, they should carry out a detailed analysis and prepare a step-by-step plan that prioritizes the work that needs to be carried out. The plan should include the following:

- (a) *The water utilities should install water meters so that they can charge for their services on the basis of actual consumption;*
- (b) *The Ministry and the water utilities should launch awareness campaigns to encourage water conservation in home installations and industrial enterprises;*
- (c) *The water utilities should repair leaky pipes in the water-supply networks; and*
- (d) *The State Committee of Amelioration and Water Management should reconstruct the irrigation infrastructure.*

There have been developments both for water and sanitation and for irrigation.

- (a) According to the MENR report to the Protocol on Water and Health in 2010, currently 41.4 per cent of the population and 100 per cent of industrial enterprises are equipped with water meters. Irrigation tariffs are currently charged by water consumption, although the price continues to be very low;
- (v) That is not done systematically, but presumably there have been some campaigns;
- (c) Leaky pipes have been being repaired and new ones have been set, e.g. 87.2 km of new/repared pipes in Baku City. Most of the leakages in the urban areas occur inside the buildings, out of reach for Azersu;
- (d) The budget of the Joint Stock Company Irrigation and Water Resources Management (JSCAWE) has been substantially increased, enabling the company to repair 400 km of channels each year (in 2003 it could only repair 100km), clean 1,000 km (in 2003 it could only clean 500 km). The company has new machinery and is more efficient.

Recommendation 7.3:

The Ministry of Ecology and Natural Resources should ensure that the amount of untreated or poorly treated domestic and industrial waste water is reduced. To this end,

- (a) *The Ministry, in cooperation with the executive powers, should carry out an analysis and prepare a step-by-step plan with clear priorities;*
 - (b) *The respective executive powers should rehabilitate their sewage systems and wastewater treatment plants and/or build a new one; and*
 - (c) *Industries should be required to pretreat their waste water properly before discharging it into municipal systems.*
- (a) There is no national water and sanitation plan. However, JSC Azersu has its own company plan and the same holds true for SAWMA, the company responsible for waste management in Nakhchivan Autonomous Region. There are ongoing projects on Absheron peninsula as well as in the provinces, with loans from multilateral banks, bilateral cooperation and also with the state budget and oil fund.
 - (b) The Hovsan Waste Water Treatment Plan (WWTP) cleans 400,000 m³ of water/day; maximum capacity is 600,000 m³. A larger system is being built on a stretch of 80 km in the north of Absheron peninsula, and meanwhile benefit is being derived from 16 modular WWTPs. Also WWTP are being built in other cities in the country. As a result of these efforts, bathing water quality is improving in the Caspian Sea. However, much remains to be done.
 - (d) Measures are being taken in this regard. Nearly all industries are equipped with water meters and at least consumption from the network is monitored. Fines for companies discharging water which exceed limit values for parameters have been increased (range 2,750 – 3,250 manat (ten times a civil servant's salary) for the first fine, 18,000 manat if the company fails to pay) and claims can be calculated and imposed. The cost for discharging wastewater into the municipal sewerage is 0.2 manat/m³. However, the cost of discharging pre-treated wastewater into the natural environment is currently 1.2 kopek/m³, and, according to environmental inspectors the value should be increased.

Recommendation 7.4:

- (a) *The Ministry of Ecology and Natural Resources should review and adjust the system of norms and standards. SNIP norms should be replaced by international norms that will lead to more feasible solutions. Wastewater discharge regulations should be harmonized with international, e.g. EU, standards.*
 - (b) *Water-user charges should be increased to account for inflation.*
- (a) There is a proposal to change standards chemical demand 125 mg/l, solid 35 mg/l, BOD 25 mg/l. Inspectors were not aware of the infrastructure standards.
 - (b) Not done; both drinking water and irrigation water tariffs are very low, as a benefit to the population, provided by the Government. Irrigation water costs 50 kopek per 1,000 m³, while the budget for melioration is 98 per cent from the OGE. Azersu is self-financed, but water costs 1.2 manat/person/month.

CHAPTER 8: Selected Caspian sea issues

Recommendation 8.1:

The Ministry of Ecology and Natural Resources should facilitate the process of adoption of the National Caspian Action Plan and ensure its consistency with the Caspian Environment Programme's Strategic Action Programme. It should also support the Strategic Action Programme at the regional level.

Recommendations have been implemented. A regional Strategic Action Programme (SAP) and National Caspian Action Plans (NCAP) have been developed. A Strategic Convention Action Programme (SCAP) was endorsed by the second Conference of Parties in 2007. Major areas covered are the prevention, reduction of pollution and control of polluting activities from land-based sources, seabed activities, vessels, pollution caused by dumping, the protection, preservation and restoration of the marine environment, control of invasive species and preparation for emergencies. Azerbaijan has already undertaken several activities to comply with the provisions of the Framework Convention for the Protection of the Marine Environment of the Caspian Sea

Recommendation 8.2:

The Ministry of Ecology and Natural Resources should actively pursue and solicit support from the other Caspian States to ratify the Framework Convention.

Once all Caspian Sea littoral states had signed the Framework Convention for the Protection of Marine Environment of the Caspian, the Convention entered into force in 2006.

Recommendation 8.3:

The Government of Azerbaijan should cooperate with the other Caspian littoral States in establishing an environment fund for the Caspian Sea, specifying potential sources of financing and institutional responsibility.

The proposal of an environment fund for the Caspian Sea was discussed, but no agreement could be found; hence the proposal was dropped.

Recommendation 8.4:

- (a) *The Ministry of Ecology and Natural Resources should promote the ratification by Azerbaijan of MARPOL as soon as possible;*
 - (b) *The Ministry of Ecology and Natural Resources should ensure full implementation of the Convention on Biological Diversity, including in relation to the biodiversity of the Caspian Sea.*
- (a) Azerbaijan has accessed the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL) including all six amendments.
- (b) MENR has put great efforts into implementing the Convention on Biological Diversity (CBD). The Government adopted the National Strategy and Action Plan on Conservation and Sustainable Use of Biodiversity in the Republic of Azerbaijan for the period of 2006 to 2010; its implementation is ongoing. The protected area has been significantly increased since the last EPR. An inventory of ecosystems and species has been undertaken; but the Red Book list of threatened species has not yet been updated. Azerbaijan has also launched a programme focused on integrating ecological topics including biodiversity into school curricula.

So far, the focus has mainly been on protection, but less on the sustainable use or access and benefit sharing of biodiversity. Moreover, integration of biodiversity issues into other sectors is still weak.

Recommendation 8.5:

The Ministry of Ecology and Natural Resources, when finalizing its State programme for strengthening environmental monitoring, should include a plan for strengthening the monitoring of pollution levels of the Caspian Sea and for disseminating its results.

The 2007 Presidential Decree No. 2244 on the Protection of Caspian Waters from Land-based Pollution Sources strengthened monitoring of run-offs entering the Caspian Sea from the Azerbaijan territory. The Caspian Complex Monitoring Administration monitors the 955 km long shore of Azerbaijan at 341 monitoring points, both run-offs entering the Caspian Sea (310 industries, wastewater treatment plants, rivers) and 31 industrial installations (e.g. platforms) functioning at sea. During bathing season, it monitors bathing waters at the beaches jointly with relevant institutions of the Ministries of Health and of Emergency Situations. During compliance inspections, NDEM monitors the same on-shore pollution sources as does the Caspian Complex Monitoring Administration.

CHAPTER 9: Biodiversity and forest management

Recommendation 9.1:

To improve the implementation of the Law on Environment Protection, the Law on Specially Protected Areas and Objects, and the Law on Wildlife, the Ministry of Ecology and Natural Resources should, as soon as possible, improve implementation mechanisms for biodiversity management (specifying the roles of all responsible institutions at national, regional and local levels including protected area managers- and related activities, sources of financing, and a time frame) and incorporate them into the current legislation.

MENR has to a certain extent implemented this recommendation since 2003. The responsibilities of each department in the Ministry and associated governmental agencies responsible for biodiversity management have been clearly identified. At the national and regional levels, the preparation and approval of annual budgets and activities are carried out by the various governmental institutions responsible for biodiversity management. The national parks also have annual budgets with associated activities, but as none of the parks have had Management Plans approved so far, there is no legal tool that each national park manager could use as an implementation mechanism. A park management plan would also facilitate the participation of key stakeholders in decision-making processes related to protected area management. Another implementation mechanism was the National Biodiversity Strategy and Action Plan, where the roles of the various institutions were associated with specific activities, but it ended in 2009. Azerbaijan still needs to incorporate implementation mechanisms for biodiversity management into the current legislation in order to institutionalize these implementation mechanisms, rather than continue to rely on ad hoc directives.

Recommendation 9.2:

The Ministry of Ecology and Natural Resources, in cooperation with other ministries, scientific institutions and non-governmental organization, should fully implement the Programme on Restoration and Expansion of Forests, by, inter alia:

- (a) *Capacity-building for forest administrators and other forest experts (additional university education and on-the-job training);*
- (b) *Strengthening the University Forest Faculty, especially in inventory methods and new techniques;*
- (c) *Improving the efficiency of forest inspection, and*
- (d) *Intersectoral cooperation (primarily agriculture and tourism).*

According to MENR, the Programme on Restoration and Expansion of Forests has been fully implemented in Azerbaijan. Forest restoration activities reaching 59,184 ha were carried out from 2003-2008. In 2009, after the completion of the programme, greening activities continued around the highways in the country and Absheron peninsula. Also in 2009, the Forest Development Department carried out forest restoration activities elsewhere covering 10,792 ha. In 2010, further forest restoration works were implemented around Baku-Guba, Baku-Shemakhy, Baku-Gazakh and Baku-Astara highways, as well as Baku City and Absheron peninsula. With regard to capacity-building and strengthening of the University Forest Faculty, MENR states that forest staff regularly participate in specialized courses to improve their skills and that the Forest Faculty has been supplied with more modern equipment. Despite these reported developments, Azerbaijan does not have a national forest programme, forest management plans, or a national forest inventory. Forest inspections have improved through the provision of horses for the guards and a hotline number for members of the community to report illegal logging. However, a forest inventory based on international standards is needed in order to more accurately assess the decrease in illegal logging and the benefits obtained from the programme on forest restoration and expansion. Many activities related to tourism and agriculture are taking place through the enterprises operating in the forests, but these activities are not carried out under a specific strategy for sustainable tourism development or sustainable

agriculture in forest areas. The Ministry still needs to make efforts to improve intersectoral cooperation with the Ministry of Agriculture to be able to implement more sustainable sectoral policies, especially with regards to overgrazing of cattle and sheep.

Recommendation 9.3:

It is recommended that the Ministry of Agriculture together with the Ministry of Ecology and Natural Resources should initiate discussions with donors and international organizations to establish projects that would contribute to the future conservation of landraces of crop plants and domestic animals. The promotion of landrace conservation should be included in the national biodiversity strategy and action plan.

In discussions with the Ministry of Agriculture, MENR and the Academy of Sciences, the only cooperation mentioned regarding the conservation of landraces of crop plants and domestic animals was the addition of relevant activities in the National Biodiversity Strategy and Action Plan (NBSAP). However, since no report on the implementation of NBSAP has been made publicly available, it is not possible to assess whether they were carried out, and if they were, the effectiveness of these activities. The Academy of Sciences Genetic Resources Institute did report that international organizations have provided financing for capacity-building related to collection and conservation of agricultural plants and wild relatives. The Genetic Resources Institute recently submitted a report to the International Treaty on Plant Genetic Resources with an inventory of plant genetic resources in 2006. No inventory of animal genetic resources has been published since 2003, but the Genetic Resources Institute is currently building a database with this information.

CHAPTER 10: Land use, agriculture and desertification

Recommendation 10.1:

The Cabinet of Ministers should appoint an interministerial working group to review and rationalize the responsibilities for land management of the Ministry of Ecology and Natural Resources, the Ministry of Agriculture, the State Committee for Land and Cartography and the State Committee for Amelioration and Water Management as well as the rayon and municipal authorities. Among the issues to be resolved are the following:

- (a) Assignment of responsibility for an information system on land and land degradation; and*
- (b) Development of a strategy for land conservation and sustainable land use.*

(see Recommendations 10.2 and 10.3).

An interministerial working group has not been established.

The National Programme on Rational Use of Summer and Winter Pastures, Hayfields and Combating Desertification was adopted in 2004. Actions within the Programme are being implemented.

Recommendation 10.2:

Based on the decisions of the Interministerial Working Group (see Recommendation 10.1), the responsible body should develop an integrated and unified database on land and land degradation as direct support to the development of a strategy for land conservation and sustainable land use, and land management projects and programmes. The database should be accessible to all authorities and other stakeholders in land management and land conservation.

In 2006–2009, the UNDP project on Capacity-Building and On-the-Ground Investments for Integrated and Sustainable Land Management was implemented. A database on land and land use has been developed within the project.

Recommendation 10.3:

Based on the decisions of the Interministerial Working Group (see Recommendation 10.1), the responsible body should:

- (a) Develop a prioritized and integrated strategy for land conservation and sustainable land use; and*
- (b) Derived from this integrated approach, develop targeted programmes for priority issues, for example, for combating desertification or improving pasture. Projects should be developed to test different policy tools.*

A prioritized and integrated strategy for land conservation and sustainable land use was not developed. Instead, the 2006 Comprehensive Action Plan on Improvement of the Environmental Situation for the period 2006–2010, which includes some actions to combat desertification, is being implemented.

Recommendation 10.4:

The Ministry of Agriculture should promote the development of organic farming and eco-labelling of food products. Support should primarily be directed towards capacity-building and the establishment and development of organizations for organic farming.

The system of organic farming and eco-labeling of food products is not yet in place in the country.

Recommendation 10.5:

The Ministry of Agriculture, in the longer term, should encourage the extension services to implement codes of good agricultural practices, including supporting the farmers to establish nitrogen management plans or apply integrated pest management. In this respect it is important to have a scientific basis and to make efforts to safeguard basic needs.

Codes of good agricultural practices have not been implemented, nitrogen management plans have not been established and integrated pest management is not applied.

PART III: ECONOMIC AND SECTORAL INTEGRATION

CHAPTER 11: Environmental concerns in the oil and gas sectors

Recommendation 11.1:

The Ministry of Ecology and Natural Resources should:

- (a) *Register contaminated sites and identify the level of contamination;*
- (b) *Determine the methods used for sealing offshore wells;*
- (c) *Determine the standards for the clean-up of contaminated offshore and onshore sites; and*
- (d) *Provide financial means for the work to be undertaken to seal the wells, either from the State budget, the Oil Fund, or an environmental royalty on present production.*

Sites polluted by past exploration and exploitation of oil and gas along the coast of the Caspian Sea and nearby land, especially on the Absheron peninsula, have been investigated and mapped, and clean-up has already started on several sites. The SOCAR Ecological Department, established in 2006, plays a major role in planning, performing, coordinating and monitoring these actions. This department performed detailed mapping of oil polluted territories on the Absheron Peninsula and published the Atlas of Pollution on Absheron peninsula in 2009, creating a broad database of information for planning clean-up activities.

Recommendation 11.2:

- (a) *SOCAR should begin the transition to divesting itself of the responsibility of negotiating and approving contracts with foreign companies so that it may concentrate on its managerial responsibilities and implement fully the presidential decree of January 2003 calling for its reorganization. And*
- (b) *The Ministry of Fuel and Energy should complete its staffing and strengthen its capacity to be able, at the earliest possible opportunity, to assume all its legal responsibilities, including that of negotiating contracts.*

Since 2003, SOCAR has gradually terminated all the contracts with the foreign companies dealing with the onshore and offshore drilling. The local companies that carry out drilling on the oil fields apply modern technologies.

Recommendation 11.3:

The Cabinet of Ministers should establish two advisory boards -- one for offshore and one for onshore activities, each with representatives from relevant ministries, including, in particular, the Ministry of Fuel and Energy and the Ministry of Ecology and Natural Resources, local economic interests and non-governmental organizations. The advisory boards should be supported by a secretariat able to call in independent investigations. The boards could also play a major role in the work for recommendation 11.1.

The Cabinet of Ministers has established two advisory boards -- one for offshore and one for onshore activities, each with representatives from relevant ministries, including, the Ministry of Ecology and Natural Resources, the Ministry of Industry and Energy, the Ministry of Emergency Situations, the Ministry of Health, the Academy of Sciences, and NGOs.

Recommendation 11.4:

The Ministry of Ecology and Natural Resources, in cooperation with the Ministry of Fuel and Energy, should assess the environmental impact of the activities being undertaken under each production sharing agreement within five years after the start of operations, at regular intervals thereafter and after a site has been abandoned.

MENR, in cooperation with the Ministry of Fuel and Energy, assesses the damage for the environment of the activities being undertaken under production sharing agreements. The reports with the estimation of the damage are approved by the relevant MENR departments.

CHAPTER 12: Human health and environment

Recommendation 12.1:

- (a) *The Ministry of Health should revise and update the NEHAP, which was drafted in 1991, to reflect the current situation.*
- (b) *The Ministry of Health should then ensure that the NEHAP is adopted and implemented in collaboration with the Ministry of Ecology and Natural Resources, and other relevant agencies and stakeholders.*
- (c) *In particular, the respective ministries should consider joint application for funds for priority actions under the NEHAP, NEAP and the State Programme on Poverty Reduction and Economic Development.*

The Ministry of Health has developed a new draft national environment and health action plan, which still has to be adopted.

Recommendation 12.2:

The Cabinet of Ministers should redefine and clarify the respective functions and responsibilities of the Ministry of Health's Inspectorate and that of the Ministry of Ecology and Natural Resources. Such clarification should include their specific areas of competence, the conditions for intervention and their relation with local agencies, such as local sanitary epidemiological centres, and the procedures for handling potential disagreements, should they arise.

The controlling functions of the Ministry of Health and MENR were clarified by a regulation of the Cabinet of Ministers as well by the 2008 Code on Administrative Offences.

Recommendation 12.3:

- (a) *The Ministry of Health, in cooperation with the Ministry of Ecology and Natural Resources, should develop a strategy for the overall monitoring of environmental samples and disease surveillance that enables an evidence-based approach to associating environmental status with impact on human health. This should be carried out in collaboration with WHO and other international organizations or bilateral donors to ensure coherence with international standards and practices.*
- (b) *In particular, national legislation on quality assurance standards should be reviewed and adjusted, and existing overlaps and duplications, e.g. in relation to environmental monitoring responsibilities, should be assessed and removed (e.g. in air quality monitoring).*

No strategy for the overall monitoring of environmental samples and disease surveillance has been developed. The national legislation on quality assurance standards has not been reviewed and adjusted.

MENR and the Ministry of Health cooperate closely within the WHO programme on environment and health. Each ministry carries out monitoring under its mandate, and there is regular exchange of the monitoring results between them.

Recommendation 12.4:

- (a) *The Ministry of Health should revise the health information system in the light of the policy objectives to be achieved and of the supportive analysis to be performed.*
- (b) *The Ministry of Health should develop indicators and establish and maintain rigorous procedures to ensure quality control and inter-laboratory comparability of results. The Sanitary Epidemiological Service could play a central role in developing and making available this capacity to local laboratories. It should also assess the possibility of developing partnerships with donors (e.g. international development agencies, foundations) to finance better laboratory facilities and technical capacity.*
- (c) *The Ministry of Health should continue to direct major efforts towards building the appropriate infrastructure and capacity in health professions dealing with the primary collection and management of health statistics. This should be carried out in line with the above recommendation, and to the extent possible within the framework of international collaboration and support. High priority should be given to investing in a transition from a manual to an electronic system for the collection, storage, transmission and processing of health data.*
- (d) *The possibility of developing partnerships and agreements with other key bodies, such as the Ministry of Ecology and Natural Resources, should also be considered for sharing information.*

In order to assess the state of the environment on human health, the Ministry of Health coordinates the social and environmental health monitoring system. The health information database is being developed.

Recommendation 12.5:

The Ministry of Health should encourage and support the Scientific Research Institute in strengthening its international outreach and capacity to build partnerships for conducting and funding research. The submission of research results to scientific peer-reviewed international journals should be strongly encouraged, as should the identification of potential international partners and donors to support research activities. This should be accompanied by further developing researchers' professional skills, including through the development of exchange programmes with other scientific institutions.

The Ministry of Health supports and coordinates the activities of subordinated research institutes, and sanitary and epidemiological institutions. The Ministry of Health also cooperates with the international organizations, including WHO.

Recommendation 12.6:

The Ministry of Health should take advantage of opportunities provided by being a Party to the Protocol on Water and Health to develop partnerships with other relevant ministries and bodies and advocate the implementation of the policy recommendations set out in the Protocol, with a view to developing a comprehensive approach to water supply and sanitation, i.e. source protection, treatment and distribution of water; and disposal of human waste and waste water.

In 2010, the country reported on the status of implementation of the Protocol on Water and Health. To comply with the provisions of the Protocol, Azerbaijan should set targets related to the quality of drinking water supplied, which has not yet been done.

To develop a comprehensive approach to water supply and sanitation in rural areas, the Presidential Order on Improving the Supply of Population with Ecologically Pure Water has been adopted and is being implemented. Water purification units have been built in 122 villages in 12 districts, providing a population of 224,000 people with drinking water meeting WHO standards. Currently, each resident of the countryside gets up to 30 litres per day of water for drinking purposes. It is expected that this programme will cover 500 villages and 800,000 people.

Recommendation 12.7:

The Ministry of Health, e.g. through the Scientific Research Institute, and with WHO assistance, should support the efforts of the Radiation Medicine Department in investigating the possible health effects resulting from exposure to radioactivity from low specific activity (LSA) scales in residential areas in the vicinity of oil field.

The recommendation has not been implemented.

Recommendation 12.8:

The Ministry of Health should work with the Ministry of Ecology and Natural Resources to revise present practices for the safe disposal of medical waste. Positive experiences developed in some health facilities (e.g. the separate collection of sharp materials in some hospitals in Baku) should be extended. The use of safe incinerating units should also be considered, as an alternative to landfilling, and criteria for the selection and operation of safe incinerators should be developed based on experience gained from existing programmes.

The Ministry of Health developed regulation on the requirements for medical waste management, which was adopted by the Cabinet of Ministers on 28 December 2007. Although there are some improvements, especially in management of the medical waste in the private health sector, where several clinics and ambulances in Baku are using incinerators as a disposal option, overall the medical waste remains a problem for Azerbaijan. There were no changes identified in the practice of the State-owned health sector.

*Annex II****SELECTED REGIONAL AND GLOBAL ENVIRONMENTAL AGREEMENTS***

Worldwide agreements			
Year		Year	Status
1949	(GENEVA) Convention on Road Traffic		
1951	International Plant Convention	2000	Ra
1954	International Convention for the Prevention of Pollution of the Sea by Oil		
1957	(BRUSSELS) International Convention on Limitation of Liability of Owners of Sea-going Ships		
1958	(GENEVA) Convention on Fishing and Conservation of Living Resources of the High Seas		
1958	Convention on the Continental Shelf		
1958	Convention on the Territorial Sea and the Contiguous Zone		
1958	Convention on the High Seas		
1960	International Convention for the Safety of Life at Sea		
1960	(GENEVA) Convention concerning the Protection of Workers against Ionising Radiations		
1963	(VIENNA) Convention on Civil Liability for Nuclear Damage 1997 (VIENNA) Protocol to Amend the 1963 Vienna Convention on Civil Liability for Nuclear Damage		
1963	(MOSCOW) Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water		
1969	(BRUSSELS) Convention on Civil Liability for Oil Pollution Damage 1976 (LONDON) Protocol		
1969	(BRUSSELS) Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties		
1971	(RAMSAR) Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1977 1982 (PARIS) Amendment 1987 (REGINA) Amendments	2001	Ra
1971	(GENEVA) Convention on Protection against Hazards from Benzene (ILO 136)		
1971	(BRUSSELS) Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage		
1971	(LONDON, MOSCOW, WASHINGTON) Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil thereof		
1972	(PARIS) Convention on the Protection of the World Cultural and Natural Heritage	1993	Ra
1972	(LONDON) Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1978 Amendments (incineration) 1980 Amendments (list of substances)	1997	Ra

Ac = Accession; Ad = Adherence; De = denounced; Si = Signed; Su = Succession; Ra = Ratified.

Worldwide agreements (<i>continued</i>)			
Year		Year	Status
1972	Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons, and their Destruction		
1972	International Convention on the International Regulations for Preventing Collision at Sea	1997	Ra
1972	(GENEVA) International Convention for Safe Containers		
1973	(WASHINGTON) Convention on International Trade in Endangered Species of Wild Fauna and Flora	1998	Ra
	1983 (GABORONE) Amendment		
1973	(LONDON) Convention for the Prevention of Pollution from Ships (MARPOL)	2004	Ra
	1978 (LONDON) Protocol (segregated ballast)		
	1978 (LONDON) Annex I on Prevention of pollution by oil	2004	Ra
	1978 (LONDON) Annex II on Control of pollution by noxious liquid substances	2004	Ra
	1978 (LONDON) Annex III on Hazardous Substances carried in packaged form	2004	Ra
	1978 (LONDON) Annex IV on Sewage	2004	Ra
	1978 (LONDON) Annex V on Garbage	2004	Ra
	1978 (LONDON) Annex VI on Prevention of Air Pollution from Ships	2004	Ra
1975	Convention Concerning the Protection of the World Cultural and Natural Heritage		
1977	(GENEVA) Convention on Protection of Workers against Occupational Hazards from Air Pollution, Noise and Vibration (ILO 148)		
1979	(BONN) Convention on the Conservation of Migratory Species of Wild Animals		
	1991 (LONDON) Agreement Conservation of Bats in Europe		
	1992 (NEW YORK) Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS)		
	1995 (THE HAGUE) African/Eurasian Migratory Waterbird Agreement (AEWA)		
	1996 (MONACO) Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS)		
1980	Convention on the Physical Protection of Nuclear Material		
1981	Convention Concerning Occupational Safety and Health and the Working Environment		
1982	(MONTEGO BAY) Convention on the Law of the Sea		
	1994 (NEW YORK) Agreement Related to the Implementation of Part XI of the Convention		
	1994 (NEW YORK) Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks		
1985	Convention Concerning Occupational Health Services		
1985	(VIENNA) Convention for the Protection of the Ozone Layer	1996	Ra
	1987 (MONTREAL) Protocol on Substances that Deplete the Ozone Layer	1996	Ra
	1990 (LONDON) Amendment to Protocol	1996	Ra
	1992 (COPENHAGEN) Amendment to Protocol	1996	Ra
	1997 (MONTREAL) Amendment to Protocol	2000	Ra
	1999 (BEIJING) Amendment to Protocol		
1986	Convention Concerning Safety in the Use of Asbestos		

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Worldwide agreements (<i>continued</i>)			
Year		Year	Status
1989	(VIENNA) Convention on Early Notification of a Nuclear Accident (VIENNA) Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (BASEL) Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal 1995 Ban Amendment 1999 (BASEL) Protocol on Liability and Compensation	2001	Ra
1990	(LONDON) Convention on Oil Pollution Preparedness, Response and Cooperation		
1992	(RIO) Convention on Biological Diversity	2000	Ra
	2000 (CARTAGENA) Protocol on Biosafety	2005	Ra
1992	(NEW YORK) Framework Convention on Climate Change	1995	Ra
	1997 (KYOTO) Protocol	2000	Ra
1993	Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction		
1994	(VIENNA) Convention on Nuclear Safety		
1994	(PARIS) Convention to Combat Desertification	1998	Ra
1997	(VIENNA) Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management		
1997	(VIENNA) Convention on Supplementary Compensation for Nuclear Damage		
1998	(ROTTERDAM) Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade		
2001	(STOCKHOLM) Convention on Persistent Organic Pollutants	2004	Ra

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Regional and sub regional agreements			
Year		Year	Status
1950	(PARIS) International Convention for the Protection of Birds		
1951	Convention for the Establishment of the European and Mediterranean Plant Protection Organisation		
1957	(GENEVA) European Agreement - International Carriage of Dangerous Goods by Road (ADR) European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) Annex A Provisions Concerning Dangerous Substances and Articles Annex B Provisions Concerning Transport Equipment and Transport Operations	2000	Ra
1958	(GENEVA) Agreement - Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts.		
1958	Convention Concerning Fishing in the Water of the Danube		
1968	(PARIS) European Convention - Protection of Animals during International Transport 1979 (STRASBOURG) Additional Protocol		
1969	(LONDON) European Convention - Protection of the Archeological Heritage		
1969	(LONDON) European Convention - Protection of the Architectural Heritage		
1973	(GDANSK) Convention on fishing and conservation of the living resources in the Baltic Sea and the Belts 1982 (WARSAW) Amendments		
1974	Yugoslav-Italian Agreement on the Protection of the Waters of the Adriatic Sea and Coastal Areas Against Pollution		
1974	(HELSINKI) Convention on the Protection of the Marine Environment of the Baltic Sea Area		
1976	European Convention for the Protection of Animals Kept for Farming Purposes		
1976	Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircrafts		
1976	Protocol Concerning Co-operation in Combating Pollution of Mediterranean Sea by oil and Other Harmful Substances in Cases of Emergency		
1976	Convention for the Protection of the Mediterranean Sea against Pollution		
1979	(BERN) Convention on the Conservation of European Wildlife and Natural Habitats	1999	Ra
1979	(GENEVA) Convention on Long-range Trans-boundary Air Pollution 1984 (GENEVA) Protocol - Financing of Co-operative Programme (EMEP) 1985 (HELSINKI) Protocol - Reduction of Sulphur Emissions by 30% 1988 (SOFIA) Protocol - Control of Emissions of Nitrogen Oxides 1991 (GENEVA) Protocol - Volatile Organic Compounds 1994 (OSLO) Protocol - Further Reduction of Sulphur Emissions 1998 (AARHUS) Protocol on Heavy Metals	2002	Ra
	1998 (AARHUS) Protocol on Persistent Organic Pollutants	2003	Ra
	1999 (GOTHENBURG) Protocol to Abate Acidification, Eutrophication and Ground-level Ozone		

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Regional and subregional agreements (*continued*)

Year		Year	Status
1980	Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources		
1982	Protocol Concerning Mediterranean Specially Protected Areas		
1986	Agreement for the Environmental Protection from Pollution of the Tisza River and Tributaries		
1991	(ESPOO) Convention on Environmental Impact Assessment in a Transboundary Context	1999	Ra
1992	(HELSINKI) Convention on the Protection and Use of Transboundary Watercourses and International Lakes	2000	Ra
	1999 (LONDON) Protocol on Water and Health	2002	Ra
1992	(HELSINKI) Convention on the Transboundary Effects of Industrial Accidents	2004	Ra
1992	(HELSINKI) Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992		
1992	(PARIS) Convention for the Protection of the Marine Environment of the North-East Atlantic		
1993	(OSLO and LUGANO) Convention - Civil Liability for Damage from Activities Dangerous for the Environment		
1994	(LISBON) Energy Charter Treaty	1997	Ra
	1994 (LISBON) Protocol on Energy Efficiency and Related Aspects	1997	Ra
1996	Treaty between the Federal Government of FRY and Government of the Russian Federation on Cooperation on Environmental Protection		
1996	Treaty between the Federal Government of FRY and Government of the Russian Federation on Cooperation on Preventing Industrial Hazards, Natural Disasters and Remediation of their Consequences		
1998	(AARHUS) Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters	1999	Ra
	2003 (KIEV) Protocol on Pollutant Release and Transfer Register		
1999	Agreement for the Establishment of a General Fisheries Council for the Mediterranean		
2000	(FLORENCE) Convention on European Landscape		
2003	(TEHRAN) Framework Convention for the Protection of the Marine Environment of the Caspian Sea	2006	Ra

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Annex III

SELECTED ECONOMIC AND ENVIRONMENTAL INDICATORS

Air pollution	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Emissions of SO ₂										
- Total (t)	35,100.0	2,600.0	13,600.0	15,500.0	13,200.0	13,800.0	12,400.0	9,200.0	7,200.0	
- by sector (t)										
Energy					10,302.0	11,600.0	9,600.0	6,500.0	3,484.0	1,705.0
Industry					1,704.0	1,900.0	2,560.0	2,400.0	3,500.0	2,381.2
Transport					269.8	101.3	53.6	49.4	51.4	53.4
Other					924.2	198.7	186.4	250.6	164.6	4,139.6
- per capita (kg/capita)	4.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
- per unit of GDP (kg/1,000 National currency units)										
Emissions of NO _x (converted to NO ₂)										
- Total (t)	24,200.0	27,100.0	26,300.0	24,200.0	25,200.0	25,800.0	29,300.0	23,100.0	28,700.0	24,184.0
- by sector (t)										
Energy						19,800.0	22,800.0	17,400.0	15,100.0	13,267.0
Industry						5,500.0	6,000.0	5,300.0	13,100.0	10,510.0
Transport						130.0	150.0	200.0		182.8
Other						370.0	350.0	200.0	500.0	224.2
- per capita (kg/capita)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
- per unit of GDP (kg/1,000 National currency units)										
Emissions of ammonia NH ₃										
- Total (t)	15.8	8.0	10.4	6.2	6.3	4.5	7.4	7.5	8.3	7.0
- by sector (t)	24,200.0	24,000.0	26,300.0	24,200.0	25,200.0	25,800.0	29,300.0	23,100.0	28,700.0	
Energy										
Industry									7.8	
Transport										
Other										
Emissions of total suspended particles (TSP)								19,802.0		
- Total (t)	19,200.0	25,000.0	29,400.0	34,100.0	43,500.0	28,200.0	23,700.0	28,400.0	31,300.0	
- by sector (t)										
Energy					660.5	706.0	600.0	500.0	300.0	225.5
Industry					39,787.0	25,700.0	21,600.0	26,800.0	30,200.0	19,128.0

Air pollution (continued)		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Transport							51.0	23.8	23.1	27.4	24.3
Other						3'001.5	1'757.9	1'476.2	1'076.9	772.6	424.2
Emissions of non-methane volatile organic compounds (NMVOC)											
- Total (t)		185.0	194.0	143.0	139.0	172.0	130.0	130.0	127.0	127.0	
- by sector (t)											
Energy		32.0	41.0	24.0	29.0	29.0	45.0	45.0	43.0	43.0	
Industry		153.0	153.0	119.0	110.0	143.0	85.0	84.0	84.0		
Transport						125.0	138.3	106.0	152.0	131.0	62.8
Other						-125.0	-138.3	-105.0	-152.0	-47.0	-62.8
Emissions of persistent organic pollutants (PCBs, dioxin/furan and PAH)											
- Total (t)					56.4	56.4	57.0	57.0	57.0	57.0	
- by sector (t)											
Energy					45.2	45.2	45.2	46.0	46.0	46.0	
Industry					11.2	11.2	11.4	11.0	11.0	11.0	
Transport											
Other											
Emissions of heavy metals											
- Total cadmium (t)											
- Total lead (t)											
- Total mercury (t)											
Greenhouse gas emissions (total of CO ₂ , CH ₄ , N ₂ O, CFC, etc.) expressed in CO ₂											
- Total (thousand t)		40,987.0	41,710.0	41,584.0	44,297.0	46,524.0	50,635.0	4,933	45,014.0	45,014.0	
- by sector (thousand t)											
Energy		33,734.0	34,002.0	33,513.0	36,147.0	38,063.0	41,003.0	41,030.0	36,714.0	36,714.0	
Industry		143.0	247.0	366.0	403.0	468.0	839.0	1,187.0	1,187.0	1,187.0	
Transport		2,279.0	2,472.0	2,562.0	2,921.0	3,432.0	3,632.0	3,978.0	1,187.0	1,187.0	
Agriculture		311.0	261.0	204.0	191.0	270.0	330.0	5,187.0	5,187.0	5,187.0	
Waste		2,641.0	2,788.0	2,809.0	2,704.0	2,914.0	3,607.0	1,596.0	1,906.0	1,906.0	
Other											
Emissions of CO ₂											
- Total (thousand t)		29,274.0	28,842.0	28,703.0	31,347.0	33,280.0	35,845.0	35,006.0	31,957.0	31,957.0	
- by sector (thousand t)											
Energy		29,132.0	28,596.0	28,338.0	3,094.5	32,813.0	35,007.0	30,771.0	30,771.0	30,771.0	

Land resources and soil		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Arable land (thousand ha)		1,825.6	1,835.7	1,837.2	1,838.5	1,840.7	1,843.2	1,841.3	1,854.0	1,860.2	
Cultivated land (thousand ha)		1,041.5	1,162.3	1,222.9	1,219.5	1,293.8	1,327.9	1,326.3	1,323.9	1,499.9	
Soil erosion											
- % of total land		41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8
- % of agricultural land		43.7	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6
Fertiliser use per ha of cultivated land											
- Mineral fertilizers (kg/ha)											
- Organic fertilizers (t/ha)											
Pesticide use (kg/ha)											
Energy		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total primary energy supply (TPES) (Mtoe)									13.50	15.10	13.40
Total final energy consumption (TFC) (Mtoe)									7.60	8.80	7.30
- by fuel											
Coal									0.00	0.00	0.00
Petroleum products									2.80	3.20	2.90
Gas									3.00	3.70	2.80
Electricity									1.40	1.40	1.10
Heat									0.40	0.40	0.30
Other										0.10	0.20
- by sector											
Industry									1.70	2.00	1.70
Transport									1.90	2.20	1.80
Agriculture									0.20	0.30	0.20
Other									3.80	4.30	3.60
Energy intensity TPES/GDP (PPP) (toe/thousand US\$ (2000) PPP)											
Energy productivity GDP (PPP)/TPES (thousand US\$ (2000) PPP/toe)											
TPES/Population (toe per capita)									1.57	1.74	1.52
Transportation		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of transport accidents (land, air and maritime)		1,987	1,985	2,196	2,311	2,388	3,179	3,197	3,104	2,970	2,792
In which											
- Died		596	559	642	724	811	1,065	1,027	1,107	1,052	930
- Injured		2,199	2,228	2,486	2,691	2,766	3,668	3,606	3,432	3,232	3,044
Size and composition of motor vehicle fleet (1,000)		440,626	451,642	457,442	511,460	554,031	612,069	690,012	773,318	860,047	925,866

Transportation (continued)										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Freight vehicle fleet										
- Trucks	78,566	77,142	76,928	79,019	80,918	90,852	97,395	110,391	113,088	117,378
Passenger vehicle fleet										
- Buses (including passenger vans)	16,756	17,275	17,422	18,781	20,991	26,735	27,474	28,092	29,340	29,985
- Cars	332,026	342,958	350,559	400,439	438,964	479,447	548,979	616,853	700,080	759,203
Passenger transportation (million passenger kilometres)	11,367	11,741	11,968	12,588	13,814	14,746	15,956	17,657	18,981	19,745
Freight transportation (million ton kilometres)	15,948	18,447	20,277	22,291	23,283	26,534	43,294	78,007	88,607	97,704
Waste										
Generation of waste										
- Total waste generation (t)										
- Hazardous waste (if available, by class of hazard) (t)	26,556	16,437	9,777	26,861	11,183	12,831.0	29,518.0	10,381.0	24,255.0	
- Industrial waste (t)		23,922.6	44,243.9	60,452.5	63,031.9	64,139.5	61,999.6	31,688.5	48,469.8	
- Municipal waste (thousand t)		5,300.0	7,724.2	7,868.8	7,431.7	7,321.5	6,600.0	6,797.7	6,160.0	
- Radioactive (nuclear) waste (t)										
Transboundary movements of hazardous waste (t)	189,950.0	31,680.0	15,320.0	18,350.0	14,630.0	9,753.0	2,220.9	2,901.0	8,080.0	
Waste intensity (total waste generated per unit of GDP) (t/1,000 National currency units)	26,600.0	16,400.0	9,800.0	26,800.0	11,200.0	12,800.0	29,500.0	10,400.0	24,200.0	
Waste recycling and reuse (t)	2,210.0	6,900.0	4,300.0	3,700.0	10,420.0	15,500.0	14,860.0	16,400.0	4,800.0	
Health and Demography										
Drinking water quality										
- Samples failing the standards on sanitary-chemical indicators (%)	20.0	20.0	15.0	28.0	22.0	16.0	19.0	18.0	18.0	15.0
- Samples failing the standards on microbiological indicators (%)	13.0	12.0	9.0	20.0	11.0	10.0	8.0	9.0	11.0	10.0
Population with access to safe drinking water (%)							78% according to research data			
Population with access to improved sanitation (%)							80% according to research data (2006)			
Incidence of typhoid, paratyphoid infections (per 100,000 population)	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.4	0.0
Salmonella infections (per 100,000 population)	6.9	8.2	7.2	5.3	6.6	6.9	6.0	5.0	4.8	4.0
Active tuberculosis incidence rate (per 100,000 population)	64.5	61.0	54.5	48.3	44.9	44.3	43.6	43.9	49.7	49.9
Viral hepatitis incidence rate, including vaccination cases (per 100,000 population)	30.0	25.2	21.7	16.6	14.5	20.4	33.2	26.3	27.6	21.1
Health expenditure (% of GDP)	0.9	0.8	0.7	0.8	0.9	0.9	0.9	0.9	0.9	1.2
Birth rate (per 1000)	14.8	13.8	13.8	14.0	16.1	17.2	17.8	18.0	17.8	17.2
Total fertility rate	2.0	1.8	1.8	1.9	2.1	2.3	2.3	2.3	2.3	

Health and Demography (<i>continued</i>)											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Mortality rate (per 1000)	5.9	5.7	5.8	6.0	6.1	6.3	6.2	6.3	6.2	5.9	
Infant mortality rate (deaths/1000 live births)	16.4	16.6	16.7	15.5	14.4	12.7	11.9	12.1	11.4	11.3	
Female life expectancy at birth (years)	75.1	75.2	75.0	75.1	75.2	75.1	75.1	75.8	76.1	76.1	
Male life expectancy at birth (years)	68.6	68.6	69.4	69.5	69.6	69.6	69.6	70.1	70.8	70.9	
Life expectancy at birth (years)	71.8	71.9	72.2	72.3	72.4	72.4	72.4	73.0	73.4	73.5	
Population aged 0-14 years (%)	29.8	28.6	27.5	26.4	25.4	24.5	23.8	23.2	22.6	22.6	
Population aged 65 or over (%)	5.1	5.3	5.5	5.8	6.1	6.3	6.6	6.7	6.8	6.8	
Ageing index (number of persons 65 years or over per hundred persons under age of 15)	17.3	18.6	20.2	21.9	24.0	25.9	27.6	28.9	30.1	29.8	
Total population (million inhabitants)	8,114.3	8,191.3	8,269.1	8,349.0	8,447.0	8,553.0	8,665.9	8,779.8	8,896.9	8,997.4	
- % change (annual)	0.8	0.8	0.8	0.8	1.0	1.1	1.1	1.1	1.2	1.1	
- Population density (inhabitants/km ²)	94.0	95.0	95.0	96.0	98.0	99.0	100.0	101.0	103.0	104.0	
Socio economic issues											
GDP	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
- change (2000=100)	100.0	109.9	121.5	135.2	149.0	188.3	253.3	316.6	350.8	383.4	
- change over previous year (%)	111.1	109.9	110.6	111.2	110.2	126.4	134.5	125.0	110.8	109.3	
- in current prices (million National currency)	4,718.1	5,315.6	6,062.5	7,146.5	8,530.2	12,522.5	18,746.2	28,360.5	40,137.2	34,578.7	
- in current prices (million US\$)	5,272.8	5,707.7	6,235.9	7,276.0	8,680.4	13,238.7	20,983.0	33,050.3	48,852.5	43,024.4	
- per capita (US\$)	662.9	710.5	768.9	888.5	1,048.5	1,579.8	2,471.6	3,841.7	5,603.3	4,874.1	
- per capita (US\$ PPP per capita)											
Industrial output (annual 2000=100)	100.0	105.1	108.9	115.5	122.1	163.1	62.3	62.9	63.0	63.3	
Industrial output (% change over previous year)	106.9	105.1	103.6	106.1	105.7	133.5	136.6	124.0	106.0	108.6	
Agricultural output (% change over previous year)	112.1	111.1	106.4	105.6	104.6	107.5	100.9	104.0	106.1	103.5	
Share of agriculture in GDP (%)	15.9	14.7	13.8	12.3	10.8	8.6	6.7	6.4	5.3	6.4	
Labour productivity in industry (% change over previous year)											
Consumer price index (CPI) (% change over the preceding year, annual average)	101.8	101.5	102.8	102.2	106.7	109.6	108.3	116.7	120.8	101.5	
Producer price index (PPI) (% change over the preceding year, annual average)	127.4	101.8	97.7	116.1	112.9	118.9	117.7	108.0	111.6	80.8	
Registered unemployment (% of labour force, end of period)											
Labour force participation rate (% of 15-64 year-old)											
Employment in agriculture (%)											
Current account balance											
- Total (million US\$)	-167.8	-51.7	768.4	-2,020.5	-2,589.3	167.3	3,707.6	9,018.9	16,453.5	10,172.8	
- (as % of GDP)	3.2	0.9	12.3	27.8	29.8	1.2	17.6	27.2	33.7	23.6	
Balance of trade in goods and services (million US\$)	94.7	238.8	-454.0	-1,516.4	-2,077.2	1,329.1	5,821.9	13,093.2	20,669.1	12,970.3	
Net foreign direct investment (FDI) (million US\$)	29.2	220.1	1,066.9	2,293.1	2,329.7	458.2	-1,306.4	-5,102.7	-545.0	146.2	

Socio economic issues (<i>continued</i>)											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Net foreign direct investment (FDI) (as % of GDP)	0.6	3.8	17.1	31.5	26.8	3.4	6.2	15.4	1.1	0.3	
Cumulative FDI (million US\$)				3,948.7	4,697.5	4,475.3	4,468.9	4,291.1	3,982.4	2,899.0	
Foreign exchange reserves											
- Total reserves (million US\$)											
- Total reserves as months of imports											
Exports of goods (million US\$)	1,858.3	2,078.9	2,304.8	2,624.5	3,742.9	7,648.9	13,014.6	21,269.3	30,586.4	21,096.8	
Imports of goods (million US\$)	1,539.0	1,465.0	1,823.3	2,722.7	3,581.6	4,349.8	5,269.4	6,045.0	7,574.6	6,513.8	
Net external debt (million US\$)	1,158.0	1,162.0	1,385.0	1,575.0	1,588.0	1,650.0	1,972.0	2,441.9	3,001.1	3,421.8	
Ratio of net debt to exports (%)	62.3	55.9	60.1	60.0	42.4	21.6	15.2	11.5	9.8	16.2	
Ratio of net debt to GDP (%)	22.0	20.4	22.2	21.6	18.3	12.5	9.4	7.4	6.1	8.0	
Exchange rate, annual averages (National currency unit/US\$)	0.895	0.931	0.972	0.982	0.983	0.946	0.893	0.858	0.822	0.804	
Income and poverty											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
GDP per capita (1,000 US\$/capita)	0.7	0.7	0.8	0.9	1.0	1.6	2.5	3.8	5.6	4.9	
Poverty		49.0	46.7	44.7	40.2	29.3	20.8	15.8	13.2	10.9	
- Population living below 50% of median income (%)											
Income inequality (Gini coefficient)											
Minimum to median wages (minimum wage as a percentage of median wage)											
Communications											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Telephone lines per 100 population	10.0	10.7	11.4	11.5	12.2	13.0	14.0	14.5	15.1	15.9	
Cellular subscribers per 100 population	5.3	7.9	9.7	12.8	17.4	26.8	39.0	52.4	69.9	87.8	
Personal computer in use per 100 population						2.3	3.1	3.7	4.4		
Internet users per 100 population						8.0	10.0	11.0	17.0		
Education											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
Literacy rate (%)	98.9	99.0	99.0	99.1	99.2	99.3	99.4	99.5	99.6	99.6	
Education expenditure (% of the GDP)	3.9	3.5	3.1	3.3	3.4	3.0	2.5	2.5	2.4	3.3	

Source: Ministry of Ecology and Natural Resources, 2010

*Annex IV****LIST OF MAJOR ENVIRONMENT-RELATED
LEGISLATION IN AZERBAIJAN***

Codes, laws, Government resolutions and ministerial orders**1992**

Law on Sanitary-Epidemiological Services

1996

Law on the Protection of Plants

1997

Forest Code

Water Code

Law on Public Health

Law on the Radiation Safety of the Population

Law on Pesticides and Agrochemicals

1998

Law on Mineral Resources

Law on Industrial and Municipal Waste, with significant changes as of 2007

Law on Hydrometeorology

Law on Fishery

1999

Law on Environmental Protection

Law on Environmental Safety, with significant changes as of 2007

Law on Wildlife

Land Code

Criminal Code

2000

Law on Specially Protected Natural Areas and Objects

2001

Law on Air Protection

2002

Law on Mandatory Environmental Insurance

Law on Access to Environmental Information, with significant changes as of 2010

Administrative Code, with significant changes as of 2008

2004

Law on Hunting

2006

Law on phytosanitary regulations

2008

Law on natural treatment areas and resorts

2009

Law on Beekeeping

Law on access to the Caspian Sea

Concepts, strategies, programmes and plans**1998**

National Environmental Action Plan for the period 1998-2003

2003

State Program on Environmentally Sustainable Social and Economic Development for the period 2003-2010

State Programme on Poverty Reduction and Sustainable Development for the period 2003-2005

2004

State Strategy on Hazardous Waste Management for the period 2004-2010

State Programme on the Development of Hydrometeorology for the period 2004-2010

State Programme on Summer/Winter Pastures, Effective Use of Meadows and Desertification Prevention in the Republic of Azerbaijan for the period 2004-2010

State Program on Reforestation and Aforestation for the period 2004-2008

State Programme for the Socioeconomic Development of the Regions for the period 2004-2008

2006

Comprehensive Action Plan on Improvement of the Environmental Situation in the Republic of Azerbaijan for the period 2006-2010

National Strategy and Action Plan on Biodiversity Conservation and Sustainable Use for the period 2006-2009

2008

State Programme on Poverty Reduction and Sustainable Development for the period 2008-2015

State Programme on Renewable and Alternative Sources of Energy for the period 2008-2015

State Programme on Food Security for the period 2008-2015

2009

State Programme for the Socioeconomic Development of the Regions for the period 2009-2013

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