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NOTE

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Preface

The second Environmental Performance Review (EPR) of Uzbekistan began in February 2008 with a preparatory mission. During this mission, the final structure of the report was discussed and established. A review mission took place from 20 to 29 April 2009. The team of international experts taking part included experts from Finland, France, Germany, Kazakhstan and the United States of America, 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 and its translation into Russian were submitted to Uzbekistan for comment and to the Expert Group on Environmental Performance for consideration in September 2009. During its meeting on 19 October 2009, the Expert Group discussed the report in detail with expert representatives of the Government of Uzbekistan, focusing in particular on the conclusions and recommendations made by the international experts.

The EPR recommendations, with suggested amendments from the Expert Group, were then submitted for peer review to the sixteenth session of the UNECE Committee on Environmental Policy on 20 October 2009. A high-level delegation from Uzbekistan 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 Uzbekistan and its experts who worked with the international experts and contributed their knowledge and assistance. UNECE wishes the Government of Uzbekistan 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 and Switzerland for their financial contributions; to the Governments of Finland and Germany for having delegated their experts for the review; and to UNEP and the United Nations Development Programme for their support of the EPR Programme and this review.

Executive summary

The first Environmental Performance Review (EPR) of Uzbekistan was carried out in 2001. This second review intends to measure the progress made by Uzbekistan in managing its environment since the first EPR, and in addressing upcoming environmental challenges.

Since 2001, Uzbekistan has moved through significant periods of economic development and privatization. Economic growth results have been impressive, and since 2002, gross domestic product (GDP) has more than doubled. Although the poverty gap has been reduced to some extent, much more needs to be done, particularly in rural areas. Between 2001 and 2005, the difference between the poverty rate in urban and rural areas grew from 8 per cent to almost 12 per cent.

Despite its rich and varied natural environment, Uzbekistan became the centre of several serious environmental crises caused by environmental neglect combined with environmentally unfriendly economic policies. The large-scale use of chemicals for cotton cultivation, inefficient irrigation and poor drainage systems have led to a high filtration rate of contaminated and salinized water back into the soil. As a result, the freshwater supply has received further contaminants. Almost 50 per cent of all irrigated land is classified as saline, and about 5 per cent of irrigated land is severely saline.

The abstraction of huge amounts of water for irrigation purposes from the two main rivers in the region, the widespread use of agrochemicals and the insufficient treatment of wastewater are causing health and environmental problems on a significant scale. In 2007, the Aral Sea covered only 10 per cent of its original size. Uzbekistan has shifted its attention away from restoring the Aral Sea and towards creating a series of lakes to its south in order to gain microclimate benefits, and to combat erosion, desertification, deforestation and the loss of biodiversity.

The decision-making framework and its implementation

Uzbekistan upholds sustainable development as a priority. The 1997 National Sustainable Development Strategy (NSDS) continues to serve as the overarching framework for sustainable development and functions as the basic reference document for all strategies and legislation. All governmental documents must be consistent with the Strategy.

Overall, little attention is given to the environment in the Strategy, which is essentially a statement of principles to guide development in all sectors in the country. Most of the Strategy is dedicated to economic and social issues, with the general emphasis being on expanding growth and reducing poverty. Along with the NSDS, the National Environmental Action Plan, the National Environmental Health Action Plan and the National Biodiversity Strategy and Action Plan continue to be the basic strategies for sustainable development and environment protection. The 2007 Welfare Improvement Strategy for 2008–2010 focuses on harnessing the accelerated growth to reduce poverty in the country.

Since 2001, Uzbekistan has been developing new and amended environment-related laws in order to provide implementation measures for basic normative laws, to address issues previously neglected and to enable legislation to be consistent with relevant international laws and standards. Although the regulatory framework is also being developed, it is not unusual for the regulations required for implementation to lag behind the enactment of the law.

Compliance and enforcement mechanisms

State control by the competent public authorities, self-monitoring by enterprises and monitoring by citizens are the main mechanisms used to bring enterprises and individuals into compliance with the

requirements of environmental laws. Since 2001, the above mechanisms, as well as the relevant provisions of the environmental and natural resources laws, have not been amended significantly.

Certain amendments to the environmental laws were introduced with the aim of reducing the administrative burden of the business community by limiting the power of environmental enforcement authorities to suspend or cease activities, except in certain cases, for example, imminent or potential threats to human health or the environment. Moreover, the Cabinet of Ministers approved a number of regulations that give limited responsibilities in some spheres of environmental enforcement to different ministries, committees and agencies.

While in the early 2000s the state ecological expertise (SEE) procedures were annually conducted on less than 5,000 facilities, in 2007 and 2008 they were conducted on approximately 12,000 facilities. The strategic environmental assessment instrument is not promoted in Uzbekistan. However, an SEE is mandatory for draft state programmes and concepts as well as town planning documentation at the design stage of facilities for a population size of over 50,000 people. For planned activities that are subjected to an SEE, a positive opinion given in the environmental impact assessment (EIA) report is the equivalent of an environmental permit.

The list of facilities subject to EIA and their division into four categories are not compatible with similar lists of projects subject to EIA under the European Union Directive on the assessment of the effects of certain public and private projects on the environment or the Convention on Environmental Impact Assessment in a Transboundary Context. Public hearings as part of the EIA procedure have been referred to the discretionary power of the SEE authority and the developer.

Environmental monitoring, information, public participation and education

The monitoring networks have not been enlarged, and in some areas have even been reduced since 2001. There is a need to strengthen environmental monitoring to make it an effective information and policy tool, to promote public participation in decision-making and to introduce the sustainable development principle into education and training at various levels.

The monitoring system does not meet the requirements of national monitoring regulations. Most environmental quality standards are still basically the same quality standards that were used during the Soviet period, while some of those related to ambient air have been reconsidered. In practice, a large number of pollutants that are covered by emission standards are not actually monitored by facilities.

The system of standards remains comprehensive, but overambitious. An excessively large number of regulated pollutants imposes unrealistic monitoring and enforcement requirements on the public authorities. Since a number of Uzbek standards are below the detection and calculation thresholds, it is impossible to know whether or not they are being implemented.

The pollution monitoring information system is well structured and provides data according to polluting parameters and individual enterprises. Once every two years, an information bulletin on the state of pollution sources and their environmental impact is published. The innovative feature of the bulletin is that it publishes exceedances in pollution levels by individual enterprises and compares them to the established limit values and relevant maximum allowable concentrations. This system of "naming and blaming" is unique among the countries that the United Nations Economic Commission for Europe (UNECE) has reviewed.

Important environmental issues are not covered by statistical data collection. The State Committee on Statistics continues to collect environment-related statistical data following the statistical forms that were introduced 20 to 30 years ago, practically without having made any changes.

Uzbekistan does not publish a regular statistics compendium on the environment. A limited number of environment-related data are published in the national Statistical Yearbook. The State Committee on Statistics produces an annual bulletin on the main indicators of environmental protection and the rational use of natural resources for restricted use by selected public authorities only. Many environmental data collected by the State Committee on Statistics are not available to the public.

However, the State Committee for Nature Protection (SCNP) has been actively disseminating environmental information to raise public awareness. It created a dedicated web portal and established the Chinar publishing house, which publishes the monthly Environmental Herald in Uzbek and Russian with supplements for children. Chinar also publishes many ad hoc environmental publications.

However, other authorities involved in environmental matters disseminate and popularize environmental information poorly. That would imply that Uzbek citizens are not sufficiently informed about environmental issues of concern such as the pollution of urban air, surface water, groundwater, soil and foodstuff, especially by pesticides.

Legislation does not support public participation in developing legal acts, regulations or programmes. Nonetheless, the SCNP involves members of the public in the discussion of such documents by inviting representatives of specialized non-governmental organizations to the meetings of its management board, but there is no subsequent feedback on whether or not the comments have been taken into account.

About half of the preschool institutions organize activities on environmental matters and sustainable development. Although primary schools cover environmental issues, secondary and high schools do not have the environment in their curricula. Few chairs on environmental issues or sustainable development exist at the university level.

International cooperation and commitments

Uzbekistan is a party to 24 multilateral environmental agreements (MEAs). However, their implementation could be more efficient. Although Uzbekistan has been regularly attending international meetings, the lack of national coordination effectively hampers the country's contribution to the favourable outcome of such intergovernmental forums. Furthermore, national reporting obligations under MEAs are not always adhered to in a timely and comprehensive manner.

Although Uzbekistan is positioning itself as a significant regional player, the country is a party to only one of five UNECE conventions. Owing to the transboundary nature of the conventions, there is uncertainty at the government level as to what accession would entail in practice.

Actual implementation of the Millennium Development Goals (MDGs) still requires further improvements. Following the 2000 United Nations Millennium Declaration, Uzbekistan formulated its own national targets and indicators. Although environmental sustainability is being incorporated in most development strategies and action plans, Uzbekistan can potentially achieve the MDG environmental sustainability targets. Progress, however, has been very slow, largely due to the lack of political will and commitment to institutionalize and effectively implement measures on environmental protection.

Located downstream in the Aral Sea internal drainage basin, Uzbekistan depends on transboundary waters from upstream countries. The scarcity of freshwater is currently, and will be in the future, the greatest environmental problem, since water is the key resource for irrigating low productivity saline lands for agricultural production. This situation calls for a new approach to the regulation of water management between sovereign States, highlighting the need to establish an adequate international legal framework for cooperation.

An important prerequisite for good neighbourly relations between countries is the assessment of the environmental impact of facilities and activities at an early phase of planning, including their cross-border impact. The Convention on Environmental Impact Assessment in a Transboundary Context and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes can provide an important legal basis for such dialogue and cooperation.

Economic instruments and environmental expenditures for environmental protection

The pollution charges regime has been stringent and environmental fund resources have increased. The increase in the rates of taxes on natural resources, while reducing profit tax rates, enabled Uzbekistan to make a shift towards green taxation. Tariffs have become more cost-reflective and the collection rate has increased. Environmental management, in particular spending on water supply and sanitation, is recognized as a priority in Uzbekistan.

No new financial instruments have been introduced since the last EPR. However, there have been changes to the rules that determine the calculation of payments under existing instruments, including privileges and the allocation of revenues at different territorial levels.

A number of users have benefited from special treatment regarding compensation payments for environmental pollution and waste disposal. Reforms have moved towards tightening the regime of exemptions and privileges. However, one exception introduced by the 2006 reform exempted all state-owned organizations from pollution charges.

The system of environmental funds has proven its role as a reliable source of funding for environmental purposes. Revenues accruing to the National Fund for Nature Protection include 25 per cent of the revenues of the system of local funds, income from participating enterprises, voluntary contributions and publishing activities. In addition, according to the 2004 reform, the National Fund for Nature Protection receives 50 per cent of the fines and claims for environmental damage which result from the activities of central environmental inspectors.

However, an increased emphasis on transparency, methodological work and improved policy analysis would improve the National Fund's effectiveness. Earmarked funding can play an important role in channelling financing towards environmental purposes and shielding environmental policies from competing claims on resources. Enterprises carry out the bulk of environmental spending in the country. They can benefit from tax breaks when introducing environmentally friendly technologies that are certified by environmental authorities, which ensure that these technologies fulfil the necessary requirements. According to the rules governing environmental funds, enterprises' environmental expenditures can be offset against payments due for pollution charges.

Water management for sustainable development

There is a huge disparity between the amount of water resources that are generated (about 10 per cent) and the total amount of water resources used in the country. Irrigation consumes 90 per cent of the total volume of water used. There are huge losses of water in the agricultural sector due to the degraded irrigation infrastructure and the application of obsolete irrigation techniques. The current quality of the country's water resources remains extremely unsatisfactory, resulting in the increase in morbidity rate (kidney disease, oncological and acute infectious diseases), and adult and child mortality rates.

Ongoing reforms aim at the rational use and protection of water resources. The creation of the two-level system of national water resources management, through the establishment of the basin administrations of irrigation systems and water user associations, has become the most important component of the reforms.

Although the in-stream disposal of public utility wastewater has been decreasing in recent years, the purification rate is not sufficiently high. The low operating efficiency of wastewater treatment plants results in an increased concentration of pollutants in surface water streams and depression reservoirs. Moreover, treated wastewater is reported to contain increased concentrations of ammonium and nitrites. Given that main water streams can no longer be used as sources for drinking water supplies, adequately providing the population with good quality fresh drinking water is one of the country's most serious problems.

Land management and protection

Agriculture is one of the key and most vulnerable sectors of Uzbekistan's economy, contributing to GDP by 30.7 per cent in 2007. With regard to food security, agriculture accounts for 80 per cent of the entire food consumption in Uzbekistan. In 2007, 64.1 per cent of the total population lived in rural areas. Almost 88 per cent of the population lived under the threat of desertification, a figure likely to increase as a result of climate change. Sustainable development in the agricultural sector is a high priority for preventing migration from the rural areas, easing social frictions and maintaining social stability.

Cotton is the country's most important cash crop. Uzbekistan is still the world's second largest cotton exporter after the United States. The amounts of irrigation water, pesticides and fertilizers required for cotton cultivation are high, and significantly higher than those required for wheat. The level of direct state intervention in the production of cotton and wheat has remained high, and there are no pricing incentives to rationalize the use of basic resources, particularly water.

Land management faces problems such as soil salinity, soil erosion and the contamination of soil by harmful substances. Despite the stabilization after the more negative trend in the 1990s, the overall degree of land degradation in irrigated areas is high, with about 55 per cent suffering from degradation and reduced fertility levels in some form. The main threats faced by irrigated land are salinization, the elevation of groundwater levels, soil drifting, irrigation erosion and ravine erosion.

Overgrazing caused the degradation of more than 16.4 million ha (or 73 per cent) of grazing land. Pastures are the most widespread form of land use for agricultural purposes. Permanent meadows and pastures cover 54 per cent of the country's territory, compared to 11 per cent of arable lands. Moreover, the removal of vegetation for fuel and firewood initiates erosion processes, including water erosion on sloping lands.

Unsustainable management practices are widespread and pose the threat of further land degradation. The lack of crop rotation and large-scale cotton and wheat production, together with the limited use of organic fertilizer, lead to low organic matter content in the topsoil and reduced soil fertility.

Energy and the environment

In 2000, Uzbekistan's energy intensity (primary energy consumption per unit of GDP) was about 4 times higher than the energy intensity of China. To reinforce its action as regards energy efficiency, in 2002 the Cabinet of Ministers adopted the Programme on Energy Efficiency until 2010. The first concrete and positive step to implement the programme is the progressive installation of meters for water and heating.

Despite the great potential of renewable energy, especially solar energy, there is no plan to develop renewable energy sources. At the institutional and political levels, there are no general targets in terms of the rational use of renewable energy sources. To date, only hydroelectricity, which represents about 10 per cent of the installed electric power, is being developed.

On the contrary, Uzbekistan anticipates increasing the share of coal from 5 to 10 per cent in the next five years, which would lead to a large increase in emissions. However, although this objective for 2010 was

mentioned in the first EPR, it has not been realized. The oil and gas processing industry is the second largest fixed source of the country's air pollution. The high sulphur content (up to 2.7 per cent) in crude oil and an absence of desulphurization lead to high sulphur dioxide emissions from thermal power stations, boiler houses and refineries (58.8 per cent of industrial emissions and 30.7 per cent of the total sulphur dioxide emissions in the country).

Climate change and the environment

Uzbekistan participates in the Clean Development Mechanism (CDM) as a non-Annex I party to the United Nations Framework Convention on Climate Change (UNFCCC) and a non-Annex B party to the Kyoto Protocol. At the time of review, Uzbekistan was the only Central Asian country with six projects, all on nitrous oxide (N_2O) reductions, registered by the CDM Executive Board of the UNFCCC. Other projects focusing on carbon dioxide (CO_2) and methane (CH_4) reduction were not selected. N_2O emissions account for only approximately 5 per cent of total emissions in the country, whereas the majority of emissions come from CO_2 and CH_4. Additionally, it is likely that greenhouse gas (GHG) emissions will increase as a result of the country's energy policy, which favours the conversion from gas to coal in electricity production.

However, at the same time, the country is implementing a major change in its energy policy, reverting back to the use of brown coal in energy generation. Specifically, a threefold increase in coal production to approximately 10 million tons and a more than fourfold increase in the share of coal-fired energy production from 3.9 to 15 per cent are being implemented. No official estimates are available of the GHG emissions caused by the conversion from gas to coal. Nevertheless, significant steps have been taken in order to adjust energy policy to the new realities imposed by climate change, including tariff-based and non-tariff-based measures.

Melting glaciers and snow reserves, the drying up of the Aral Sea and indications of high water losses through evaporation, outdated irrigation practices and infrastructure underline the close links between climate change, water security and development in Central Asia, especially in Uzbekistan. It is imperative to accelerate the adoption and implementation of measures to reduce the wasteful use of water and energy and to encourage more sustainable forms of agricultural development to ensure the country's sustainable development and stability.

Conclusions and recommendations

Chapter 1: Policymaking framework for sustainable development and environmental protection

The National Commission for Sustainable Development was abolished in 2005, and its policy functions were delegated to the Cabinet of Ministers. When the Commission was previously under the Vice Prime Minister, there was also an operational working group, with organizational and technical support from the Ministry of Economy. However, no such secretariat structure exists now. There is a department within the Cabinet of Ministers to which the functions have been delegated, but this is not set up to carry out the day-to-day technical work of a secretariat that is given the task of overseeing the implementation of the 1997 NSDS. At the same time, the SCNP has routine coordination functions for most of the policies and plans related to the NSDS.

Recommendation 1.1:
The Cabinet of Ministers should consider re-establishing the National Commission for Sustainable Development and designate the Ministry of Economy as its secretariat.

The 1997 NSDS is intended to function as an overarching framework for all other strategic and legal documents in Uzbekistan. In the 12 years since its adoption, it has not been reviewed or revised; neither does it contain a set of indicators to measure progress towards implementation. Some countries have carried out peer reviews of their own national strategies on sustainable development. This has proven to be an extremely useful tool for governments in revising and refining their national strategies on sustainable development and furthering their implementation.

Recommendation 1.2:
The Cabinet of Ministers, with the involvement of relevant ministries and agencies, should:
(a) Carry out a peer review of the 1997 National Sustainable Development Strategy and amend it with indicators of, and procedures for, monitoring implementation;
(b) Review and renew the key documents that constitute the policy and legal framework in order to maintain their accordance with the National Sustainable Development Strategy.

The National Environmental Action Plan was adopted in 1998 and has not undergone revision. Much has changed in Uzbekistan since then: the economic environment is quite different; the legal framework has moved forward; and some of the original objectives and targets for environmental protection have been accomplished. Recent major policy documents, such as the 2007 Privatization Programme for 2007–2010 and the 2007 Welfare Improvement Strategy for 2008–2010, need to be reflected in new environmental policy documents that would, among other things, clearly show how these strategies are linked to environmental protection.

Recommendation 1.3:
The State Committee for Nature Protection, in cooperation with relevant ministries and agencies, should prepare a comprehensive national environmental action plan taking into account the current social, economic and environmental situation and establishing new objectives and targets on this basis with concrete funding possibilities and the designation of relevant institutions.

The first EPR of Uzbekistan (2001) recognized the effort made by Parliament in establishing a good legal framework for environmental protection. At the same time, it noted some of the shortcomings resulting from reliance on largely normative laws, including the need to ensure the timely enactment of government regulations.

Since 2001, Uzbekistan has been developing new and amended environment-related laws. Although the regulatory framework is also being developed, it is not unusual for the regulations required for

implementation to lag behind the enactment of the law. An environmental code would help to consolidate environmental legislation. It could be developed in such a way as to ensure that: human health and the environment are protected against damage caused by pollutants or other impacts; valuable natural and cultural environments are protected and preserved; biological diversity is preserved; land, water and the physical environment in general are used so as to secure sound long-term management in ecological, social, cultural and economic terms; reuse and recycling are promoted; the management of materials, raw materials and energy take into account the need to establish and maintain natural cycles.

Recommendation 1.4:
The State Committee for Nature Protection and relevant ministries and agencies should consider preparing a draft environmental code that will establish the overriding principles of the law and set the full regulatory framework for implementation.

During the preparatory phase of the 2007 Welfare Improvement Strategy for 2008–2010, there were two interim documents: the Living Standards Improvement Strategy for the Population of Uzbekistan 2004–2006 and up to 2010 and the Welfare Improvement Strategy for 2005–2010: Interim Poverty Reduction Strategy Paper. Both of these documents were drafted with the broad participation of both the Government and civil society of Uzbekistan and contained a full section that dealt with environment protection as a necessary element for improving the quality of life. However, the finalization of the Welfare Improvement Strategy appears not to have involved full participation, and environmental issues were given much less emphasis. The Government has adopted the Welfare Improvement Strategy, which is considered to be one of the primary references for donors and the country's main development strategy.

Recommendation 1.5:
The Ministry of Economy together with the State Committee on Nature Protection should amend the Welfare Improvement Strategy to reflect adequately, among others, the National Sustainable Development Strategy and all relevant key environmental concerns.

Chapter 2: Compliance and enforcement mechanisms

The principal attitudes and approaches to environmental compliance and enforcement, as well as the package of environmental policy instruments used in Uzbekistan, have not significantly changed since the first EPR of the country.

One of the specific features of the environmental enforcement system in Uzbekistan is a very centralized approach to the planning, regulation and monitoring of inspections by the NCCEC. The prevailing general approach promoted by the NCCEC is to reduce the burden on enterprises in Uzbekistan by cutting down the number of environmental inspections. This has a number of positive consequences for the business community and provides a better regulatory regime for operations in the country. However, this also leads to a situation where the enforcement authorities apply environmental law rather inconsistently and chaotically without a clear and consistent strategic vision of how to ensure compliance with and the enforcement of environmental requirements. The continual reduction in the number of inspections could not be considered as the main performance indicator to assess the effectiveness and efficiency of environmental compliance and enforcement mechanisms. This reduction will not result in the improvement of environmental conditions or the achievement of sustainable development goals.

Recommendation 2.1:
The State Committee for Nature Protection, together with relevant bodies, should:
(a) Develop a strategy on environmental enforcement that defines objectives and priorities, appropriate time frames and performance indicators ensuring compliance with and the enforcement of environmental requirements;
(b) Ensure the capacity-building activities necessary for the effective implementation of the strategy at relevant administrative levels.

The range of environmental policy instruments, for example environmental audits or public participation requirements in the environmental impact assessment procedure, is not used or advocated because of unclear legal provisions. While such an approach is often considered as a means to speed up the effective use of some new and progressive instruments in the country, it has some serious shortcomings. The lack of knowledge of these instruments and requirements by government regulators and the regulated community alike may complicate their effective implementation. Also, it may cause serious regulatory conflicts, lead to legal discrepancies and even to possible problems of corruption. Strategic environmental assessments are not promoted at all, although, according to current legislation, it is compulsory to carry out state ecological expertise for draft state programmes and concepts.

Recommendation 2.2:
The State Committee for Nature Protection should:
(a) Draft by-laws on environmental policy instruments, such as environmental audits, environmental impact assessments and strategic environmental assessments;
(b) Promote their practical application through detailed implementation plans and guidelines.

Public availability of reports (reviews, summaries) on inspection and enforcement activities in environmental protection and the use of natural resources is an important aspect of the transparency and public accountability of the environmental enforcement authorities. Furthermore, the reports are a source of valuable data and information of major interest for citizens and NGOs in terms of the public environmental control over industries and the use of enforcement mechanisms regarding the offences detected.

Recommendation 2.3:
The State Committee for Nature Protection, together with relevant bodies, should:
(a) Ensure public access to the relevant data, such as reviews and summaries, on inspection and enforcement activities in environmental protection and the use of natural resources;
(b) Update these data regularly.

Uzbekistan uses administrative fines, in essence, as the only available administrative penalty and, to a greater extent, as the only sanction for non-compliance with environmental law. Such a situation does not allow for assessing the efficiency and effectiveness of fines as an enforcement tool. They do not act as a deterrent to prevent further non-compliance with environmental requirements. In this context, it is also useful to review the issue of penalties for repeated and regular administrative offences, because the available options of suspending or terminating activities involve major restrictive economic factors.

Recommendation 2.4:
The State Committee for Nature Protection should review the efficiency and effectiveness of the current use of administrative sanctions for environmental offences and consider possibilities to strengthen them in cases of repeated or systemic violations of environmental legislation.

EIA and the issuance of environmental permits are already a part of national legislation and key instruments of environmental policy already actively used in Uzbekistan. However, in many areas they are not harmonized with relevant legal instruments of the United Nations Economic Commission for Europe (UNECE) and the European Union, such as the UNECE Espoo Convention[1], the European Union Directive on EIA[2], and the UNECE Aarhus Convention[3]. This is particularly the case for the list of activities subject to EIA and stages of the EIA procedure, as well as public participation in environmental decision-making. Further delays in the ratification of the above UNECE conventions may increase inconsistencies in the implementation of the above instruments of environmental policy in Uzbekistan with the relevant international good practices (chapter 4).

[1] Convention on Environmental Impact Assessment in a Transboundary Context.
[2] Council Directive of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment (85/337/EEC).
[3] Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

Recommendation 2.5:
In order to harmonize the instruments of environmental impact assessment and public participation with the relevant UNECE instruments, the Cabinet of Ministers should:
(a) Speed up the process of ratification of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) and the Kiev Protocol on Pollutant Release and Transfer Registers of the Aarhus Convention;
(b) Establish a detailed legal and regulatory framework to ensure the full implementation of these instruments.

Chapter 3: Monitoring, information, public participation and education

Uzbekistan made significant progress towards the creation of an integrated environmental monitoring system. The SCNP coordinates the monitoring activities of six public authorities under the state monitoring programmes. However, the inter-agency coordination council has not met since 2006. While Uzbekistan substantially improved the monitoring of pollution sources, the urgently needed progress was not made in developing its ambient environmental monitoring networks. Network density far from meets the requirements of national monitoring regulations. The concentrations of a number of pollutants identified by the international community as being the most harmful to human health and the environment are not measured. Biodiversity and ecosystem monitoring remain underdeveloped in Uzbekistan. The country does not have an integrated or interconnected environmental electronic database.

Recommendation 3.1:
The State Committee for Nature Protection, in coordination with other government bodies and with the assistance of the inter-agency coordination council on environmental monitoring, should:
(a) Enlarge the environmental monitoring networks in an optimal way to meet the requirements of monitoring regulations;
(b) Increase the number of parameters measured, in particular $PM_{2.5}$, PM_{10}, volatile organic compounds, polyaromatic hydrocarbons and persistent organic pollutants in ambient air, and additional biological parameters in water;
(c) Switch gradually to automatic measurement, and improve data quality control and storage procedures;
(d) Make the monitoring of biodiversity an effective part of the state monitoring programme;
(e) Establish an integrated environmental database at the State Committee for Nature Protection which should be interlinked with the environmental databases of the other public authorities operating environmental monitoring programmes.

Although Uzbekistan continues to apply most former USSR ambient environmental standards (MACs), it has either formally reapproved them as national standards, or slightly revised or reissued them. There is no inter-agency coordination for consultation in Uzbekistan when reviewing, developing or revising MACs. As a result, there is a disparity between the nominal MACs and their actual implementation (compliance). Since a number of Uzbek standards are below the detection threshold, it is impossible to know whether or not they are being implemented. Owing to budget limitations, many pollution parameters that should be measured according to monitoring standards are not routinely monitored.

Recommendation 3.2:
The Ministry of Health, jointly with the State Committee for Nature Protection, should review the list of maximum allowable concentrations (MACs) to limit substantially the number of regulated parameters to those that can be measured, to the extent possible, and to make the MACs consistent with international standards and guidelines.

The SCNP regularly publishes a national report on the state of the environment and the use of natural resources and a report presenting the results of emission and discharge monitoring. The reports are largely descriptive and do not follow the UNECE Guidelines for the Preparation of Indicator-based Environment Assessment Reports in Eastern Europe, Caucasus and Central Asia endorsed at the sixth Environment for Europe Ministerial Conference (Belgrade, 2007). Uzhydromet, the Ministry of Health, the Ministry of Agriculture and Water Management and the State Committee on Geology and Mineral Resources publish the environmental data that they collect for a limited number of public authorities only. The State Committee on Statistics does not publish a regular statistics compendium on the environment. A limited number of environment-related data are published in the national Statistical Yearbook, which is distributed as a sales publication only.

Recommendation 3.3:
The Centre of Hydrometeorological Service (Uzhydromet), the State Committee on Statistics, the Ministry of Health, the Ministry of Agriculture and Water Management and the State Committee on Geology and Mineral Resources should make the environmental data that they collect and process easily accessible to the public by uploading data sets and their easy-to-read interpretations on their websites, while considerably increasing the number of copies of their current environment-related publications for wide circulation throughout the country and launching new ones, such as a freely accessible annual compendium of environmental statistics.

These public authorities and the State Committee for Nature Protection should use the UNECE Guidelines for the Preparation of Indicator-based Environment Assessment Reports in Eastern Europe, Caucasus and Central Asia endorsed at the sixth Environment for Europe Ministerial Conference (Belgrade, 2007).

Uzbekistan adopted some legal and regulatory documents promoting the principles of public access to information, including environmental information. The Law on State Ecological Expertise and the Cabinet of Ministers Resolution on the Regulations on State Ecological Expertise restrict public participation in the environmental impact assessment of proposed activities, plans and programmes. Legislation does not provide for public participation in the issuing of environmental permits in Uzbekistan. Preparations are under way in Uzbekistan towards accession to the Aarhus Convention. Much has to be done in the country to comply with the Convention's provisions, especially those related to public participation and access to justice. Ad hoc efforts by the SCNP and some other public authorities to involve the public in decision-making are not systematic and as such do not establish a transparent and clear framework.

Recommendation 3.4:
The State Committee for Nature Protection and the Ministry of Justice, in cooperation with the representatives of civil society, should continue their work to introduce mechanisms and requirements of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) in the national legislation and regulations to make them clear, transparent and consistent.

Uzbekistan adopted the Programme (2006–2010) and the Concept on the Development of Environmental Education, Training and Retraining of Environmental Manpower, and Perspectives of Improving the System of Professional Training. However, many specific actions established in the programme have not been implemented. The national action plan for the implementation in Uzbekistan of the UNECE Strategy for Education for Sustainable Development has been under preparation since 2006. The environmental training of civil servants is not consistent or systematic.

Recommendation 3.5:
The Ministry of Higher and Secondary Special Education and the Ministry of Public Education, in cooperation with the State Committee for Nature Protection and other stakeholders, including non-governmental organizations and the mass media, should:

(a) Speed up the finalization of the national action plan for the implementation in Uzbekistan of the UNECE Strategy for Education for Sustainable Development;
(b) Review the composition of the Coordinating Council on Environmental Education and Education for Sustainable Development by raising the level of representation and involving all stakeholders to make the Council an effective instrument for implementing the Strategy.

Chapter 4: Implementation of international agreements and commitments

Legislation for the preservation of protected species is fragmented and coordination among the numerous actors involved is not efficient. Without effective and quick action, more species will become extinct within the country's territory. Data are often lacking, and hunting sometimes continues even within protected natural areas. Unfortunately, there is little law enforcement to prevent poaching outside the protected natural areas.

Recommendation 4.1:
The State Committee for Nature Protection should:
(a) Develop a comprehensive programme to protect biodiversity in accordance with the requirements stipulated in the relevant international agreements, especially the Convention on Biological Diversity;
(b) Update and implement its 1998 National Biodiversity Strategy and Action Plan.

Among and within executing agencies, the focal points for particular multilateral environmental agreements (MEA) are not clearly identified. Neither are alternate focal points clearly designated, including for MEAs to which Uzbekistan is not a party. The focal points of related MEAs are not designated within the same executing agency. Although focal point tasks include attending Conference of the Parties meetings and other relevant regional preparatory meetings, the coordination of related activities at the national level, for example liaising with national experts, is not satisfactory.

National reports, in line with the obligations under MEAs, are not comprehensive enough or submitted on time. The executing agency designated as the focal point for a particular MEA does not have the authority to request technical assistance through the MEA secretariat in order to facilitate access to, compliance with or the implementation of the MEA in question.

Recommendation 4.2:
The State Committee for Nature Protection, in cooperation with agencies involved in international environmental matters, should develop a coordinating mechanism for designating focal points in order to facilitate coordination and information exchange.

UNECE conventions require more political cooperation than the global MEAs. Uzbekistan has ratified the Water Convention and is in the process of ratifying the Espoo and Aarhus Conventions. The ratification of the UNECE Transboundary Air Pollution Convention would help Uzbekistan to identify the specific measures to be taken to cut air pollutant emissions through scientific collaboration and policy negotiation. It would also be part of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) network on air pollution.

Furthermore, Uzbekistan shows its interest through regular participation in the meetings of the Convention on the Transboundary Effects of Industrial Accidents. Uzbekistan, as part of different administrative regional organizations, is also involved in early-warning systems. A fact-finding team visited Uzbekistan in July 2007 and concluded that Uzbekistan has already to a great extent implemented many of the Convention's basic requirements. Subsequently, the country could enter the next phase of the programme and actively work on implementing the Convention's more complex requirements, receiving assistance when needed. The Cabinet of Ministers approved a government programme on foreseeing and preventing emergency situations and creating a government-wide commission including all ministries and agencies to deal with emergencies, including natural emergencies.

Recommendation 4.3:
The responsible ministries should further comply with the substantive elements as incorporated in the Convention on Long-range Transboundary Air Pollution and the Convention on the Transboundary Effects of Industrial Accidents.

The Cabinet of Ministers should decide to accede to these two UNECE conventions and to the Geneva Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP Protocol) under the framework of the Convention on Long-range Transboundary Air Pollution.

Uzbekistan has also participated in negotiations on the Stockholm Convention on Persistent Organic Pollutants (POPs). Of all the major global conventions only the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade remains outside Uzbekistan's field of interests.

Recommendation 4.4:
The Cabinet of Ministers should decide to accede to the Stockholm Convention on Persistent Organic Pollutants and the Rotterdam Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

Central Asian countries are locked in a web of hydrological interdependence. A balance of interests of all States in the region is urgently needed. Uzbekistan has not yet accessed the 2006 Framework Convention on Environmental Protection for Sustainable Development in Central Asia, which could be considered an important framework to intensify regional environmental cooperation. The objective of the Convention is to ensure effective environmental protection for sustainable development in the Central Asian region, including the enhancement of the environmental situation, the rational use of natural resources, as well as a reduction in and the prevention of transboundary environmental damage.

Recommendation 4.5:
The Cabinet of Ministers should accede to the Framework Convention on Environmental Protection for Sustainable Development in Central Asia so as to foster regional cooperation, especially on environmental matters.

Chapter 5: Economic instruments and expenditures for environmental protection

Some progress has taken place in a number of areas in the period since the first EPR was carried out. The pollution charges regime has been tightened and the resources available to the system of environmental funds have increased. There has been a shift towards "green taxation", increasing the rates of taxes on natural resources while reducing profit tax rates. Tariffs have become more cost-reflective and the non-payments situation has improved. Environmental management, in particular spending on water supply and sanitation, is recognized as a priority in the Welfare Improvement Strategy. The framework for environmental spending has improved, against the background of general progress in budgetary reforms in the country.

The system of pollution charges plays an important role in financing public environmental spending and creates incentives for a reduction in emissions and waste. This dual role (revenue-raising and behaviour-changing) depends on strict payment compliance and the regular revision of rates as prices increase. The current framework does not guarantee these conditions. Indexation is carried out only on an ad hoc basis. Entrusting environmental inspectors with the task of collecting payments distracts them from their core activities, introduces administrative costs and weakens enforcement. Tax authorities are in a stronger position to ensure timely payments as part of their routine tax collection duties.

Recommendation 5.1:
The State Committee for Nature Protection, the Ministry of Finance and the Ministry of Economy should:

(a) Define a mechanism to review the rates of payments for environmental pollution;
(b) Simplify the system of pollution charges, focusing on a reduced number of pollutants and determining rates to create stronger incentives for changes in behaviour.

The effectiveness of the system of pollution charges, concerning both revenue-raising and the creation of incentives for changes in behaviour, is undermined by the existence of exemptions for budget-financed organizations and communal services enterprises. From an environmental point of view, it is important for regulations to be applied in a uniform way, so that the "polluter pays" principle is clearly observed and distortions are not created because of poor incentives. If the financial burden for some organizations is considered too large, direct compensatory financing from the budget could be provided.

Recommendation 5.2:
The State Committee for Nature Protection, together with the Ministry of Finance and the Ministry of Economy, should quantify the privileges and exemptions given to budgetary organizations and enterprises and assess their effectiveness, in order to facilitate decision-making.

The system of environmental funds has proven its role as a reliable source of funding for environmental purposes. However, an increased emphasis on transparency, methodological work and improved policy analysis would improve its effectiveness. This would have a positive effect on attracting additional resources, both from the donor community and general budget financing.

Recommendation 5.3:
The State Committee for Nature Protection and the Cabinet of Ministers should increase the transparency and effectiveness of the activities of the governing councils of environmental funds by:
(a) Improving decision-making rules for the adoption of decisions in the governing councils;
(b) Improving the methodology for selecting projects for funding and evaluating their effectiveness and making this information publicly available;
(c) Publishing annual reports on the activities of funds which provide details on financial performance and show the impact on the achievement of policy targets.

Although product charges are easy to administer, they are not widely used. They would be a useful addition to the range of economic instruments available and could contribute to the simplification of the system of pollution charges, which remains overtly complicated and has significant monitoring costs.

Recommendation 5.4:
The Cabinet of Ministers, in cooperation with the State Committee for Nature Protection, should:
(a) Consider the possibility of replacing some pollution charges with product charges;
(b) Draft by-laws that increase the cost of environmentally damaging products through taxes and allocate the revenues raised for environmental purposes.

Chapter 6: Sustainable management and protection of water resources

Over 50 per cent of the lands located in the alluvial plains suffer from salinity and overwatering. Land salinization is a natural process typical of all intermountain, alluvial and proluvial areas of the arid zone. However, the main reasons for soil salinization include partial drainage-free irrigation, which is equal to 22 per cent, huge infiltration losses, the construction of unlined canals, over-irrigation, uncontrolled water supply and the use of saline water for irrigation purposes.

Although Uzbekistan plans to increase irrigation efficiency, it has achieved progresses in the area of water supply and sanitation and has had its first experiences with IWRM implementation, much remains to be done. It is necessary to create the basis for the sustainable use of water resources and for future water management, as well as to further improve the supply of drinking water that meets national requirements, in line with international recommendations, and wastewater treatment all over the country to guarantee public health and a clean environment.

Therefore, it is necessary to avoid the tremendous losses caused by inefficient irrigation techniques, infiltration via unlined irrigation canals and ditches as well as evaporation losses, which lead to soil and groundwater salinization, waterlogging and collector–drainage runoff that contains agrochemicals such as fertilizers or pesticides, by far the main surface water pollutant.

It must be ensured that restoration procedures cover not only the irrigation network's main canals and pump stations, but also practices at the level of WUAs and farmers, who need adequate training in using modern measures such as underground and overnight irrigation and financial support for the restoration of their equipment. Retired farmers who have many decades of experience in irrigation could be employed as senior experts to support the implementation of sustainable water use in agriculture.

Plants would be given just the water that they required through the introduction of water metering, adequate water fees, water-saving incentives and water dissipation penalties for all water users in agriculture.

Recommendation 6.1:
The Ministry of Agriculture and Water Management, together with the basin administrations of irrigation systems and water user associations, should implement water-saving measures for irrigation, including:
(a) Minimizing infiltration via unlined irrigation canals and ditches;
(b) Implementing modern water efficient irrigation techniques.

IWRM will help to improve water productivity, especially in arid areas. It must not only ensure the drinking water supply, but also meet the reasonable demands of agriculture and other sectors of industry, as well as environmental demands. Therefore, participative methods including all these groups and the promotion of institutional learning are indispensable. The experience gained and lessons learned in the region, with the support of the international community, will help to increase the possibility of a successful transition to IWRM principles and approaches in Uzbekistan, requiring a legislative reform process, the appropriate institutional development at the regional and district levels and powerful management tools.

The key measure is to identify a priority list for investments in sewerage and wastewater treatment, covering the construction of new, and restoration of old, installations and their scheduling and funding arrangements. This must be accompanied by training for wastewater treatment facility staff in plant operations, process controls, instrument operations and equipment maintenance.

Furthermore, it is necessary to formulate a long-term water pricing strategy that covers the full costs of investments, operations and maintenance of the wastewater infrastructure. Social or undue hardships should be avoided if appropriate solutions are found.

Another goal is to ensure that industrial wastewater is fully treated. This wastewater often contains hazardous substances such as heavy metals, phenols and oily products, which pollute surface waters when disposed of into streams or hamper the effectiveness of municipal sewage plants when disposed of into the vodokanal canalizations.

Recommendation 6.2:
The Cabinet of Ministers should:
(a) Develop and introduce legal acts on integrated water resources management principles;
(b) Establish an appropriate structure with sufficiently high status focused on integrated water management planning and responsible for ensuring the coordination of actions in the water sector, and promote the required institutional development, taking into account international experience;
(c) Establish a mechanism with stakeholders from the Government, non-governmental organizations, academia and the private sector to initiate and carry on a national policy dialogue on integrated water management within the framework of the European Union Water Initiative, as well as the UNECE Water Convention and its Protocol on Water and Health, with the UNECE as key strategic partner.

In accordance with recommendation 6.2, a long-term water pricing strategy with full cost coverage for the drinking water infrastructure is necessary, as well as the introduction of water metering for all water users. Many people, especially in the near Aral Sea region, have to use water from wells and irrigation canals which does not meet sanitary requirements. The improvement of the sanitary living conditions of these people and the prevention of dangerous intestinal diseases also depend on the state of sanitary waste and sewage treatment systems. For these people, as well as those in isolated rural settlements, local solutions or long-distance water supply are required.

Recommendation 6.3:
(a) The Agency Uzkommunkhizmat and the local authorities should improve the efficiency of wastewater treatment.
(b) The Cabinet of Ministers should develop a national strategy and a long-term programme in order to identify the aims, priorities and financial resources for the water supply and wastewater treatment infrastructure, and the Agency Uzkommunkhizmat and the local authorities should implement this strategy.

Chapter 7: Land management and protection

Agriculture plays a pivotal role in rural development in Uzbekistan. The implementation of sustainable agricultural production would benefit from an encouraging environment, including policies for the sustainable and efficient use of natural resources following the latest farming system reforms. If joint efforts are made, sustainable agriculture can be achieved under the present outlook and will contribute to preparing farmers to cope with the immediate future challenges caused by the impact of climate change and the expected increase in competition for land and water resources.

Recommendation 6.1 in the chapter on sustainable water management addresses the urgency of implementing water-saving plans for irrigation. This is justified not only for water saving, but also in the context of seeking sustainability in a wider context of land and water resources management. The observation on the need to address the compatibility of state-driven investments in irrigation systems and the community and farm level irrigation infrastructure, likewise, concerns the whole production system. Individual farmers and WUAs are in great need of training and technical support, including information on and encouragement to use water-saving and soil conservation farming techniques.

In particular, agricultural extension and other support services for farmers have shown worldwide their immense value for transferring knowledge to the farming population, particularly in the field of the sustainable use of natural resources. In turn, this will contribute to efficient farm enterprise development. Furthermore, the farming population would benefit from increased links to domestic and international markets and trade, which can be achieved through greater involvement of the private and public trade sectors. The extension services could be flanked with permits and by actively promoting training and demonstration projects on methods such as land-levelling, direct sowing, the preservation of crop residues in the fields and mulching; crop rotation and intercropping should also be encouraged as additional means for soil protection and maintaining fertility.

Recommendation 7.1:
The Ministry of Agriculture and Water Management should consider promoting the use of agricultural conservation tools for saving water and protecting soil on irrigated croplands, which could be supported with training and demonstration projects.

Many of the recommendations of the 2001 EPR address the use of market economic mechanisms as a means to provide incentives to improve land management and the rational use of natural resources. The observations concerning land and water management in the present EPR support the view that market-based or other economic instruments are not widely used or developed to improve environmental performance in the agricultural sector. The level of direct state intervention in the production of cotton and wheat has remained high, and there are no pricing incentives in the use of basic resources, particularly water.

At the same time, some observers speak on behalf of increased economy-based decision-making at the farm level, and the possibility of improving the economy, which, at best, would be conducive to the longer term planning of resources management and sustainability. Furthermore, some recommendations have already been made on creating new cash flows, such as seeking to rehabilitate marginalized lands, which can be achieved only through direct subsidies or income generation. Also, in dry land ecosystems, the improvement of the socio-economic situation of the population, focusing on alternative livelihoods and enhancing the multifunctional role of the ecosystem, would increase long-term sustainability. The use of public funding, for example in the form of payments for ecosystem services, could also be part of the overall package of economic incentives.

Recommendation 7.2:
The Ministry of Economy, the Ministry of Agriculture and Water Management and the local authorities should develop and implement market mechanisms and innovative economic incentives that improve the socio-economic condition of the rural population and, at the same time, are conducive to improving land and water management.

Various authorities in Uzbekistan have responsibilities in the management of protected natural areas. Both the representativeness and adequacy of the protected natural areas network, as well as its management, need to be further addressed. A prerequisite to ensure the sustainable conservation and protection of rare and endangered species and habitats is to create sufficiently large and non-fragmented protected natural areas, encompassing all natural ecosystems.

Recommendation 7.3:
The State Committee for Nature Protection should establish an integrated network of protected natural areas, strengthening the monitoring of biological diversity, and prepare the necessary legal and institutional decisions to extend and complete the current network.

In view of the expected significant changes and threats related to agriculture and climate change, the available means for adaptation and managing uncertainties must be addressed, including the management of transboundary waters, adapting water-wise technologies for increased water productivity by the genetic enhancement of cultivars, and integrated crop–livestock management. Additionally, land management planning may be of relevance for mitigation purposes, for example, carbon sequestration by afforestation in rangeland and degraded sloped areas, and by adding soil organic matter for improved soil management (conservation agriculture).

Recommendation 7.4:
The Ministry of Agriculture and Water Management, in cooperation with the State Committee on Land Resources, Geodesy, Cartography and State Cadastre and the Centre of Hydrometeorological Service (Uzhydromet), should address rain-fed and irrigated land in policy documents on climate change adaptation.

Only 0.5 per cent of the total land area of Uzbekistan is urban land. Although it is difficult to estimate the importance of this land, the country does not have a separate service managing urban land resources; instead these functions are carried out by various bodies. A major shortcoming in the management of urban land use is the lack of a systematic cadastral land information system. Problems with the existing cadastre include the lack of an established methodology for surveying urban land.

Recommendation 7.5:
The Cabinet of Ministers should implement the cadastral land information system of urban land in such a way as to plan and manage urban land use.

Chapter 8: Energy and the environment

Energy efficiency is a cross-sectoral subject involving all sectors of economic activity. International experience has shown that national policies benefit considerably from setting up an agency dedicated to this particular subject. Today, 30 agencies for sustainable energy exist around the world. Those agencies have varying scopes of action, and some of them are responsible for subjects beyond energy efficiency per se, such as environmental protection or the development of renewable energies. These agencies also vary in terms of their statute, with some being governmental and others semi-private.

In Uzbekistan, this type of agency would contribute to the development and implementation of a national policy of energy efficiency, as well as the rational and environmental use of energy resources, particularly in communal services and especially in rural areas where there are real environmental risks related to the use of wood for heating and coal. This agency could also develop and propose an incentive mechanism for the development of energy efficiency and renewable energies. In practical terms, it would be preferable not to simply import already existing institutional models, but to create an organization that is most suitable for the country, which requires studies and benchmarking.

Recommendation 8 1:
Uzbekenergo, in cooperation with the Agency Uzkommunkhizmat and the State Committee for Nature Protection, should consider the possibility and feasibility of establishing a state agency on energy efficiency and renewable energy based on international experience in these areas.

The Uzbek authorities are aware that the preservation of their development model requires a real effort to ensure the rational management of the country's energy resources, which will result in heavy demands on the country's public financial resources.

Annually updated and publicly available data on the main quantitative and qualitative indicators would undoubtedly be an important step towards facilitating environmental concerns in energy policy and promoting a more favourable climate for private investment. This refers also to the objectives and provisions of the public authorities concerning the evolution of energy prices in the domestic market, the evolution of demand and energy mix developments which play an important role in investment decisions. From this point of view, Uzbekistan actually suffers from low reliability in foreseeing the basic evolution parameters of the internal market, which makes it difficult to appreciate the profitability of investments in energy efficiency and renewable energies. Reliable and consistent data would allow the Government to have clear objectives and targets in the energy sector.

Recommendation 8.2:
Uzbekenergo, in cooperation with the Agency Uzkommunkhizmat and the State Committee for Nature Protection and local authorities, should draft medium-term local action plans to meet energy demands at the local level, to promote energy efficiency and to optimize the share of energy sources in the national energy balance.

The development of renewable energies is disadvantaged by the low prices currently prevailing in the domestic energy market. The experience of various solar energy projects undertaken in the country shows a real potential for the development of those technologies in Uzbekistan, in both urban and rural contexts. However, passing from the pilot to the operational stage will require government involvement.

Recommendation 8.3:
The Government should:
(a) Develop and adopt a package of measures consisting of three core components, namely guarantees for the long-term purchase of energy produced from renewable sources, subsidies for their purchase tariffs and tax credits;
*(b) Seek international assistance to develop renewable energie*s.

Chapter 9: Climate change and the environment

Melting glaciers and snow reserves, increasingly erratic climate patterns, the drying up of the Aral Sea and indications of higher water losses through evaporation, dated irrigation practices and infrastructure underlie the close links between climate change, water security and development in Uzbekistan. It is imperative to accelerate the adoption and implementation of measures to reduce the wasteful use of water and energy and to encourage more sustainable forms of agricultural development to ensure the country's sustainable development and stability. The existence of multiple sectoral programmes containing adaptation components, although indicative of a high level of awareness among policymakers, from a policy perspective does not facilitate coordinated national actions and is therefore not conducive to achieving these objectives.

Recommendation 9.1:
Uzhydromet, in cooperation with the State Committee for Nature Protection and other relevant national authorities, should develop a national adaptation strategy as soon as possible.

The Government should adopt a national adaptation strategy as soon as possible and derive sectoral programmes, policies and projects from that strategy.

The Government should ensure that adequate funding is available for the top priorities. If that is not possible, it should seek funds either through established international market-based mechanisms, such as the Clean Development Mechanism, or through the assistance of the international community.

Significant steps have been taken in order to adjust energy policy to the new realities imposed by climate change, including through tariff-based and non-tariff-based measures. At the same time, the country is implementing a major change in energy policy which involves reverting back to brown coal as the basis of an increased portion of energy generation. Specifically, a threefold increase in the production of coal (to approximately 10 million tons) and a more than fourfold increase in the share of coal-fired energy production (from 3.9 to 15 per cent) are being implemented. Yet, no official estimates have emerged in terms of GHG emissions concerning the above-mentioned programme of gas to coal conversion. Nonetheless, environmental impact assessments on the projects have been conducted by the SCNP.

Recommendation 9.2:
The Government should initiate the process to become party to the Protocol on Strategic Environmental Assessment of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention).

The State Committee for Nature Protection should initiate procedures so that the provisions defining the scope of environmental impact assessment in the current legal framework are modified to explicitly cover GHGs.

The State Committee for Nature Protection should initiate procedures to make amendments to the current legal framework to introduce strategic environmental assessments to sectoral programmes and strategies so as to explicitly cover GHGs.

Despite the significant progress achieved in Uzbekistan's monitoring and reporting system, a number of important issues remain. National communications and inventories are of a periodic nature and do not cover annual developments in the country. Although Uzbekistan is not an Annex I country, and therefore annual reporting is not under its international obligations, more regular monitoring is needed to acquire a more accurate picture of developments on the ground, including changes in the energy sector. This situation exists despite the fact that the country has relevant experience and capacity in monitoring, reporting and self-reporting in the area of pollutants. Ensuring that existing capacity and know-how in environmental monitoring is utilized more effectively would be of great assistance in promoting climate change mitigation and adaptation in the country.

Recommendation 9.3:
In order to produce a more robust inventory of GHGs, the Government should:
(a) Ensure that a sustainable system of monitoring and registering GHGs is developed, including through providing the necessary budgetary resources for this purpose;
(b) Ensure cooperation between key players in the statistical reporting related to the country's GHG inventory.

Despite the progress achieved in this field, all CDM projects registered by the UNFCCC Executive Board are on N_2O. However, other projects selected by the Interdepartmental Council focusing on CO_2 and CH_4 reduction have much more potential for GHG emission reduction. Additionally, it is likely that GHGs emissions will increase as a result of the country's energy policy, which favours the conversion from gas to coal in electricity production.

Recommendation 9.4:
The Government should:
(a) Give adequate attention to projects with a high mitigation potential, especially in terms of CO_2 and CH_4 emissions;
(b) Ensure CO_2 and N_2O emissions do not increase as a result of increased brown coal combustion and extraction, which is part of the country's new energy policy.

Implementation of 1st EPR recommendations

PART I: THE FRAMEWORK FOR ENVIRONMENTAL POLICY AND MANAGEMENT

Chapter 1: LEGAL INSTRUMENTS AND INSTITUTIONAL ARRANGEMENTS FOR ENVIRONMENTAL PROTECTION

Recommendation 1.1:
Olij Majlis should: • improve law-making procedures and harmonize the law-making activities of legislative and executive bodies; • consider adopting a law on administrative procedures to guarantee that implementing regulations are developed in an appropriate and timely manner. Environmental laws should contain provisions that clarify how nature users should implement them. The legal provisions should refer to governmental regulations.

Since 2001, a number of laws and by-laws have been adopted to improve law-making procedures and to harmonize the law-making activities of legislative and executive bodies. For example, the 2003 Law on the Rules of Procedure of the Legislative Chamber of the Oliy Majlis addresses the process to be followed by the legislative chamber in considering laws and regulations. The 2003 Law on the Rules of Procedure of the Senate of the Oliy Majlis addresses the process to be followed by the Senate in considering laws and regulations. Together, these two laws synchronize the activities of the two chambers of the Oliy Majlis.

The 2004 Law on Amendments, Additions and Revocations of Certain Legislative Acts is dedicated to the procedure for submitting draft legislation to the appropriate authorities. The Law on the Procedures for the Preparation of Draft Laws and their Submission to the Legislative Chamber of the Oliy Majlis was adopted on 11 October 2006. The 2006 Regulation on the Order of Preparation and Adoption of Government Plans for Legislative Work and for Monitoring the Execution of the Resolutions of the Cabinet of Ministers calls for the Government to prepare an annual plan of legislative work.

Together, these laws and by-laws complete the executive and legislative procedures for planning, developing, agreeing to and adopting laws, as well as for their execution and monitoring.

Recommendation 1.2:
Policy documents, such as the National Action Plan for Environmental Protection and the National Environmental Action Plan, should be backed up with implementation programmes, including legislative and institutional measures and defined financing.

Two sequential implementation plans have been developed during the relevant period. The first was the Programme for Environmental Protection and the Rational Use of Natural Resources for 1999–2005, developed and coordinated by the Ministry of Economy. The second, prepared and coordinated by the State Committee for Nature Protection (SCNP), is the 2008 Programme of Actions on Nature Protection for 2008–2012.

Other strategies of importance for implementing the National Environmental Action Plan include, among others, the 2002 Concept of Integrated Sustainable Water Supply, the 2001 Strategy for the Development of the Irrigation and Drainage Sector, the National Programme on the Development of Irrigation for 2000–2005, and the 2002 Programme on Energy Efficiency.
In addition, a number of significant new laws have been passed since 2001 which provide the legislative basis for implementing parts of the National Environmental Action Plan. Implementation and monitoring have been further strengthened by a large body of by-laws and regulations (Refer to the second Environmental Performance Review (EPR), chapter 1, for details).

Recommendation 1.3:
Olij Majlis and the Cabinet of Ministers need to pass relevant act on access to environmental information, determining the scope, type and form of information and procedures for dissemination and access. The Cabinet of Ministers should review the structure, mandates and obligations of executive agencies to ensure that they are able to provide environmental information. The relevant executive bodies will need sufficient staff and resources to collect information, analyse it and publicize it.

Uzbekistan adopted some legal and regulatory documents promoting the principles of public access to information, including environmental information. This relates to the 2002 Law on the Principles and Guarantees of Freedom of Information, the new edition of the 2002 Law on the Appeals of Citizens, and the 2007 Cabinet of Ministers Resolution on Measures for Further Interaction of Public and State Economic Management Bodies and Local Public Authorities with Legal and Natural Persons using Information and Communication Technologies.

Recommendation 1.4:
The Cabinet of Ministers should adopt regulations with clear provisions referring to assessment of environmental damages caused before privatisation and determine the liability for past pollution.

There are specific liabilities, for example in the 2002 Law on Subsoil, yet this Law does not relate to damage caused before privatization or liability for past pollution. One of the responsibilities of the mining industry is to ensure environmental assessment, environmental protection and restoration of damaged land areas and other natural sites disturbed during excavation, and this obligation does not expire. It does not, however, relate to pre-privatization damage.

A current pilot project, registered with the Ministry of Justice, is relevant. This project attempts to establish the methodological basis for procedures that could be used to assess and remediate environmental damage. Since the impact of certain industrial activities is likely to vary according to factors such as climate, topography and vegetation cover, the pilot project is being implemented on a region-by-region basis.

Recommendation 1.5:
The State Committee for Nature Protection should initiate cooperation with non-governmental organizations to implement common projects. It also should initiate a process whereby NGOs with science expertise may advise the Committee on scientific aspects of environmental decisions. Advocacy groups should publish guidebooks for the courts and citizens on the procedures involved in environmental disputes and defending the environmental rights of citizens.

The SCNP is financially supporting environmental non-governmental organizations (NGOs) from its National Fund for Nature Protection. Grants have been provided for environmental education purposes. To promote cooperation with NGOs, the SCNP plans to sign a memorandum of understanding with the European Eco Forum, a coalition of NGOs. It prepared recommendations for its territorial departments on the procedures and areas of cooperation with NGOs. The SCNP is considering establishing in the near future a consultative public council. The SCNP involves members of the public in the discussion of such documents by inviting the representatives of specialized NGOs to the meetings of its Collegium (management board).

Recommendation 1.6:
The Cabinet of Ministers should issue an Act to strengthen and make more precise the coordination power of the State Committee for Nature Protection. Coordination functions should include assessment of implementation of environmental legislation and adoption of plans for the development of regulations required to implement laws. The State Committee for Nature Protection should have the right to develop cross-sectoral policies in environmental protection in consultation with other ministries and agencies. Decisions should be taken on the basis of consensus.

Pursuant to the 2003 Presidential Decree on Strengthening the Public Administration Authorities, the coordination functions of the SCNP were strengthened as they relate to nature protection activities and environmental security. The SCNP also has the right to develop draft cross-sectoral policies in environmental protection that are then circulated for comments and eventual consensus among other ministries and agencies.

In addition, a number of new regulations governing the monitoring role of the SCNP have strengthened the Committee's authority to assess the implementation of environmental legislation. These include: (i) the 2002 Cabinet of Ministers Resolution on the Adoption of the Regulations on State Environmental Monitoring; (ii) the 2006 Cabinet of Ministers Resolution on the Approval of the Programme for Monitoring the Environment for 2006–2010; (iii) the 2003 Cabinet of Ministers Resolution on the Adoption of the Environmental Monitoring Programme of the Republic of Uzbekistan for 2003–2005; (iv) the methodology adopted by the SCNP on 2 October 2003 to monitor pollution sources; and (v) the 2003 Execution of the Cabinet of Ministers Resolution No. 401 dd. through the 2003 SCNP Order No. 38 dd. on the Comprehensive System of Monitoring River Water Quality and Pollution Sources within the Samarkand, Navoi and Bukhara regions. Monitoring data are reported on a regular basis to the Cabinet of Ministers, the Ministry of Economy and the Ministry for Emergency Situations.

Chapter 2: INSTRUMENTS FOR ENVIRONMENTAL PROTECTION

Recommendation 2.1:
The State Committee for Nature Protection, in cooperation with the Ministry of Finance and the Ministry of Macroeconomics and Statistics should reform the existing pollution charge system to make it more effective and to provide incentives for polluters to invest in pollution abatement. This could be done by: reducing the number of pollutants on which charges are levied and focusing on the major pollutants; gradually increasing charges to levels that would provide incentives to reduce pollution; and reducing the discretionary powers of the environmental authorities.

There have been a number of reforms in the system of pollution charges since the last EPR which have created stronger incentives for investment in pollution abatement. As a result of the 2006 reform, payments for emissions and discharges above limits can be up to 10 times higher than base levels. Rates have been increased to take into account price increases. However, there have been no attempts to reform the system of pollution charges to focus on a more reduced number of pollutants. Environmental inspectors' responsibility for collecting charges has a negative impact on compliance and, therefore, on incentives to reduce pollution.

Recommendation 2.2:
The Ministry of Finance and the Agency of Communal Services need to develop sectoral financing strategies and design financing mechanisms for communal services, in order to improve water and waste management services and to allow the service companies to operate on a cost-recovery basis.

There has been some progress in ensuring the financial viability of communal services companies, with a gradual shift to cost-recovery levels. Benefits for certain categories of citizens (veterans, pensioners, teachers, others) are now paid directly from the budget (Presidential Decrees No. UP-3227 of 27.03.2003 and No. UP-3596 of 13.04.2005). However, these companies still suffer from problems of payment collection and tariffs which are too low to cover investment needs. As a result of recurrent financial problems, Presidential Decree No. PP-445 of 17.08.2006 wrote off some of the debts of these companies in order to shore up their financial position.

Recommendation 2.3:
The State Committee for Nature Protection, in cooperation with the State Taxation Committee, the Ministry of Finance and the Ministry of Macroeconomics and Statistics, should evaluate the increased

use of product charges for environmental policy. The introduction of tax differentiation to encourage the use of environmentally friendly products should be considered. The first step is to define criteria and select products; the next step is to analyse the effectiveness and efficiency of the product charges.

The system of payments for environmentally dangerous goods has not yet been developed in Uzbekistan. The 2007 Tax Code does not contain any provisions encouraging the producers of environmentally friendly products. This recommendation has not yet been implemented, although there are discussions on the introduction of levies on some environmentally harmful products.

Recommendation 2.4:
The State Committee for Nature Protection should improve financial mechanisms for environmental investment by the environmental funds, both at national and at oblast level. These mechanisms will help to set investment priorities and to increase the efficient use of the environmental funds' financial resources.

Increased revenues accruing to environmental funds raised the environmental spending made possible through these environmental funds. The National Fund for Nature Protection played a more important role than initially envisaged in the fulfilment of the Programme for Environmental Protection and the Rational Use of Natural Resources for 1999–2005. As the National Fund for Nature Protection proved a reliable source of funding for environmental spending, it is expected that it will finance an increased amount of the actions envisaged in the Programme of Actions on Nature Protection for 2008–2012, reaching around 14–16 per cent of the total. Control over local funds ensures that not less than 40 per cent of total spending is earmarked for environmental purposes. However, despite the progress made, there are still unresolved issues regarding the mechanism for adopting decisions and the transparency of the criteria used for project eligibility.

Recommendation 2.5:
The 1% environmental tax that was introduced in 1998 should be earmarked for environmental expenditures, in order to make the charges more acceptable to enterprises and to increase sources of finance for environmental activities. To redirect the revenue from this tax, the Cabinet of Ministers needs to amend the law. Such an amendment could be proposed by the State Committee for Nature Protection, the Ministry of Macroeconomics and Statistics, the Ministry of Finance and the State Taxation Committee. (See also Recommendation 3.4.)

The environmental tax was abolished in 2006 as part of a general policy to reduce the tax burden on business. Despite the name, this tax was never earmarked for environmental purposes. Moreover, as it was levied on the total costs of any enterprise, without any consideration for its environmental impact or the type of activity performed, the environmental tax could not be considered as an economic instrument.

Chapter 3: ECONOMIC DEVELOPMENT AND ENVIRONMENTAL MANAGEMENT TOOLS

Recommendation 3.1:
During the process of liberalization reform, the Ministry of Macroeconomics and Statistics, in cooperation with the State Committee for Nature Protection, should define priority programmes and activities, both the short- and long-term, focusing on a limited numbers of well-defined goals with clear economic and environmental benefit.

There has been some progress in the definition of a framework for environmental action. The SCNP is responsible for the formulation and implementation of the 2008 Programme of Actions on Nature Protection for 2008–2012. However, the level of concordance with other government departments is limited. The Programme is a conservative planning exercise that focuses on what can be done with the financing that the SCNP considers could be forthcoming, rather than an attempt to define environmental problems through a broader process of public participation. Although the 2007 Welfare Improvement Strategy for 2008–2010

also includes some environmental issues, the level of detail is more limited. In general, despite the advances observed, linkages between environmental issues and economic implications are not always clearly made.

Recommendation 3.2:
The State Committee for Nature Protection, in cooperation with the State Committee on Property and Ministry of Finance, should ensure that environmental obligations are fully described in the annual privatisation programmes. Proposed provisions should include a list of pre-privatisation actions in order to describe the environmental situation of a company or site and specify proposals for cleaning up environmental pollution and bringing the environmental situation under control. A portion of the revenues from privatisation (up to 5%) should be used to ameliorate the environmental problems of enterprises that are being privatised. Environmental audits should be compulsory and included in the legislation on privatisation. See also Recommendation 1.4

The Privatization Programmes for 2003–2004 and 2005–2006, the 1999 Cabinet of Ministers Resolution on Privatization in 2001–2002 and the 2006 Presidential Decree on Strengthening the Processes of Privatization in 2006–2008 do not contain any provisions on such environmental obligations. The 2006 Regulation on the Procedure of Privatization of Objects of State Property requires only an assessment of environmental protection infrastructures. The environmental problems of privatized enterprises are not considered as expenses that can be financed by revenues from privatization. Environmental audits are not compulsory in cases of privatization; neither are any such requirements contained in the 1991 Law on Privatization or the 2006 Regulation on the Procedure of Privatization of Objects of State Property.

Recommendation 3.3:
The State Committee for Nature Protection, in cooperation with the Ministry of Health, the Ministry of Agriculture and Water Management, the State Committee for Geology and Mineral Resources and the State Committee for Safety in the Manufacturing and Mining Industries, should further develop the environmental permit system as a cornerstone of environmental regulation. Rules governing permits should be clearly defined and include specific indicators for measuring compliance. Where it would facilitate compliance, the State Committee for Nature Protection and large companies should enter into voluntary agreements for environmental protection. Such agreements could be concluded by different economic sectors at national and oblast levels. See also Recommendation 9.3

Uzbekistan has not developed the environmental permit system and there are no clearly formulated rules on environmental permits. In fact, instead, Uzbekistan uses the instrument of state ecological expertise of emission limit values. In 2005–2006, new separate rules on the calculation and approval of emission limit values for air emissions, water discharges and waste disposal were adopted. They are not based on the integrated approach to the regulation of pollutant emissions. Furthermore, these rules do not provide a clear picture of how environmental requirements and specific indicators for measuring compliance, other than approved emission limit values, are defined by the state ecological expertise bodies for each facility in question.

Although the new rules contain some references to the proposed measures on environmental protection that should be submitted by enterprises together with the draft emission limit values, they do not provide guidance on their review and agreement by the SCNP. There is no practice of voluntary agreements for environmental protection between state bodies and companies in the country. Therefore, this recommendation has not been implemented, despite the existence of approval procedures for emission limit values, which could not be considered as a full-featured environmental permit system for currently operating facilities.

Recommendation 3.4:
In order to provide the necessary financial support for investment programmes, the State Committee for Nature Protection, in cooperation with the Ministry of Macroeconomics and Statistics, and the Ministry

of Finance, should establish an effective system of charges for the use of natural resources, and improve the system of fines for environmental pollution. This includes redirecting the revenues from the 1% environmental tax. See also Recommendation 2.5

During the reviewed period, there have been improvements in the revenue-raising ability of the pollution charges system, although these have been undermined by the transfer of the revenue collection responsibility to environmental inspectors (see implementation of recommendation 2.1). In addition, rates on natural resources taxes have been increased. There are plans for further reforms of the taxation of natural resources to encourage their rational use, following a strategy of gradual change. However, only revenues for pollution charges are earmarked for environmental purposes.

Recommendation 3.5:
The State Committee for Nature Protection should strengthen its role of participation in elaboration, implementation, supervision and assessment of effectiveness of sectoral programs and projects, including the Public Investment Programme.

The role of the SCNP in influencing the Public Investment Programme remains limited. However, the Programme of Actions on Nature Protection 2008–2012 includes a number of measures that will be financed through this investment programme, although their costs are not fully estimated. There are no widespread mechanisms in place for the assessment ex post of the environmental implications of different sectoral programmes.

Chapter 4: INTERNATIONAL COOPERATION

Recommendation 4.1:
Uzbekistan should accede to both the Stockholm Convention on Persistent Organic Pollutants (POPs) and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. These steps would facilitate its full incorporation into the world's environmental community. National responsibility for the implementation of these international agreements should be assigned to the State Committee for Nature Protection.

Accession to the Stockholm Convention on Persistent Organic Pollutants has been submitted for the third time to the Cabinet of Ministers. It can be expected that Uzbekistan will officially accede to this Convention before the end of 2009. The SCNP acts as the designated national focal point for this Convention.

The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade is not expected to be acceded to in the years to come. The Ministry of Foreign Economic Relations, Investments and Trade, the designated national focal point, has given a negative opinion, referring to the perceived impediments in international trade that accession to the Rotterdam Convention may cause.

Recommendation 4.2:
Uzbekistan should consider acceding to the UNECE conventions: the 1979 Convention on Long-range Transboundary Air Pollution, the 1991 Convention on Environmental Impact Assessment in a Transboundary Context, the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes and its protocols as well as the 1992 Convention on the Transboundary Effects of Industrial Accidents, and make every effort to use the standards and procedures included in these conventions as a basis for its own bilateral agreements with neighbouring countries and for sub-regional environmental protection agreements. National responsibility for the implementation of these international agreements should be shared between the State Committee for Nature Protection, the Ministry of Agriculture and Water Management (air, environmental impact assessment and water) and the Ministry of Emergency Situations (industrial accidents).

Uzbekistan acceded to the 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) on 4 September 2007. Uzbekistan has not yet become a party to the Convention's amendments or additional protocols on water and health, and civil liability.

Uzbekistan has not yet become a party to the 1991 UNECE Convention on Environmental Impact Assessment in a Transboundary Context, but the process is well under way and accession is to be expected in the short term, possibly before the end of 2009.

Regarding the 1992 UNECE Convention on the Transboundary Effects of Industrial Accidents, the possibility of accession is under discussion. In the meantime, Uzbekistan is actively taking part in the work of the Convention, and the implementation phase of the Assistance Programme under the Convention is expected to start soon. Uzbekistan also improved and clarified the national institutional structure pertaining to this Convention.

Uzbekistan has not yet ratified the 1979 UNECE Convention on Long-range Transboundary Air Pollution.
It can be tentatively concluded that the standards and procedures included in the 1992 Water Convention increasingly form a basis for bilateral agreements with neighbouring countries and for subregional environmental protection agreements. For the other agreements, this cannot yet be determined.

National responsibility for the implementation of these UNECE Conventions is indeed shared among various ministries. The role and functions of the Ministry for Emergency Situations regarding the Industrial Accidents Convention has been clarified. The roles, functions and responsibilities of the SCNP and the Ministry of Agriculture and Water Management are less well defined.

Recommendation 4.3
Uzbekistan should speed up its internal procedures enabling accession to the Aarhus Convention. Acceding to this Convention would improve environmental management and the development of public democratic processes. National responsibility for the implementation of this international agreement should be assigned to the State Committee for Nature Protection.

The Government is in the process of acceding to the Aarhus Convention. The development of public democratic processes related to environmental management has not undergone significant improvement.

Recommendation 4.4:
Uzbekistan should take measures to incorporate into the TACIS projects a project to translate into the official Uzbek language (or into Russian) and to publish the basic environmental directives, regulations and decisions of the European Union bodies. The initiative, followed by the implementation of project results, should be undertaken by the State Committee for Nature Protection in the framework of the agreements with EU.

This recommendation has not been implemented. The elements included in this recommendation are being annually forwarded by the SCNP to the European Commission Technical Assistance Coordination Bureau under the Cabinet of Ministers, for their further development and action within the Technical Assistance to the Commonwealth of Independent States (TACIS).

Recommendation 4.5:
It is necessary to strengthen the capacity of services involved in environmental matters to allow for the effective implementation of international obligations by Uzbekistan and effective use of foreign assistance. Considerations should be given to increasing the number of staff in the Department of International Relations and Programmes of the State Committee for Nature Protection, to designating an international commission (or other body) for information exchange and coordination, and to establishing a research

centre or assigning the task of an information centre for environmental conventions and other international legal acts, for international environmental institutions, and for internationally supported projects carried out in Uzbekistan, to an existing body.

An information service was established within the SCNP in 2006. Its main functions include: participation in the establishment and implementation of information policy in the field of environment protection, sustainable use of natural resources and ecological safety; coverage in the national and foreign media of the relevant activities and policies in the field of environment protection; promoting the involvement of the public in discussions, decision-making and implementation processes in the field of environment protection and sustainable use of natural resources; and the coordination of the Internet and Web resources of the SCNP.

The establishment of this information service partially implements the recommendation. However, it does not coordinate the activities under the various bilateral, regional and international agreements, and is mainly an internal service for the SCNP, without a mandate for coordination among the ministries and institutions involved in the wide range of instruments.

Recommendation 4.6:
There is a need to strengthen internal (interministerial) coordination in Uzbekistan for internationally funded environmental protection projects, especially non-investment projects. To do so it would be advisable to designate a small section within the Department of International Relations and Programmes at the State Committee for Nature Protection. This body would participate in the preparation of projects, supervise projects assigned to the State Committee as an executive agency, review the effects of the implementation of projects supervised by other ministries, and provide information for the public on projects carried out in Uzbekistan.

Units within the Cabinet of Ministers, the Parliament and implementing ministries are coordinating internationally funded projects, including those related to environmental protection. Within the State Committee for Nature Protection, there is a unit responsible for the different tasks described in the recommendation. This unit works in close cooperation with other units involved in these projects.

PART II: MANAGEMENT OF POLLUTION AND OF NATURAL RESOURCES

Chapter 5: WATER RESOURCES MANAGEMENT

Recommendation 5.1:
The Ministry of Agriculture and Water Management and other responsible bodies in cooperation with the ministries and bodies involved in water management in the riparian countries in the region should: • Ensure that all stakeholders are represented in the Interstate Commission for Water Coordination; • Develop and implement an inter-sectoral agreement that addresses the environmental, social and economic impacts of the Aral Sea crisis and takes into account sharing of water resources, sustainable development of agriculture and energy production in the region; and • Create an inspection or other control mechanism for the implementation of the agreement.

According to the Statute of the Interstate Commission for Water Coordination (ICWC) of Central Asia, adopted on 18 September 2008, ICWC members are leaders of national water ministries or departments of state founders or of authorized representatives of country governments. The representation of all stakeholders in the ICWC is not envisaged by its Statute.

The idea of inter-sectoral agreements is not a new one, although this is a long procedure in terms of development and approval. For example, a new text of the Agreement on Water and Energy Resource Use in the Syr Darya River Basin has been prepared. However, there are some discrepancies in this Agreement that need to be settled by the countries, which have failed to reach consensus in this area for some time.

Recommendation 5.2:
The Ministry of Agriculture and Water Management and the Agency of Municipal Services and industrial enterprises, in cooperation with their counterparts in the other riparian countries, should improve existing or install new treatment facilities for industrial waste-water for the enterprises situated along the Syr-Darya and Amu-Darya rivers in order to prevent further contamination of main surface water sources in the region.

The most effective large-scale industries are based on water recycling technologies, which led to an increase in recycled wastewater volume in recent years. The discharge of polluted industrial effluents has been gradually decreasing due to the decline in industrial capacities and mainly to the activities of the environmental authorities.

In addition, the establishment of water security zones and coastal strips within 300–500 m corridors along the main rivers led to the remediation of 129 contaminated sites, reducing the impact of hazardous substances on surface water and corresponding groundwater resources.

Recommendation 5.3:
The State Administration on Hydrometeorology, the State Committee for Nature Protection, the Ministry of Agriculture and Water Management in cooperation with other riparian countries should harmonize the monitoring systems used for transboundary water, in particular the Amu-Darya and Syr-Darya rivers. This includes the use of the same analytical methods and equipment for measuring water pollutants and the same software for processing and comparing data.

The Government approved programmes to strengthen integrated observations of water quality in specific stretches of the Amu Darya, Kashka Darya and Zarafshan Rivers. Uzbekistan does not cooperate with its neighbours in the water quality monitoring of transboundary waters, although cooperation is taking place on their use and protection.

Recommendation 5.4:
The Ministry of Agriculture and Water Management should: • Develop and implement a strategy for the sustainable development of agriculture that recognizes that water is scarce and that use of water for irrigation must be decreased; • On the basis of this strategy, develop a plan for the use of irrigated lands, taking into account the quantity and quality of the water resources available in the region and the salinity of the soil; • Improve the irrigation system and introduce water metering in agriculture; • Involve the agricultural sector more actively in the management and distribution of water for irrigation. • Set up an association of water users and develop the economic and legal rules for use of water; • Develop regulations and norms on improving water management through restructuring state agricultural units into private ones; • Develop a system of water management on the basin river principles taking into account the experience gained in the countries of the European Union, in particular those with intensive agricultural activities.

In recent years, the Government has adopted a number of measures aimed at increasing efficiency, such as the reconstruction and maintenance of the irrigation and drainage network, reducing losses from canals and irrigated fields, water conservation and increasing the availability of water to districts with a low supply.

Optimal approaches to irrigation and water management mechanisms at various levels and in various regions of the country are being demonstrated by international organizations and donor countries. For the rehabilitation and reconstruction of the main canals and pump stations, about 60 billion sum (about US$ 40 million) are provided by the public budget.

From 1999 to 2000, almost 1,700 water user associations (WUA) were set up. In the field of land and water use, WUAs serve an area of 2.8 million ha, 70,000 km of irrigation channels and 50,000 km of drainage network.

Recommendation 5.5:
The Ministry of Agriculture and Water Management and the Ministry of Health, in cooperation with Agency of Municipal Services, should: • Revise the drinking water quality standards in line with WHO guidelines; • Revise the operational procedures for drinking water plant management aimed at overall quality assurance rather than end-of-station chlorination; • Conduct an evaluation of economic instruments for water (including systematic use of water meters to calculate user charges) and if needed, extension programmes to educate households on rational uses of water. • Build facilities for the demineralisation and recycling of collector-drainage water in order to save and protect surface water resources.

The main aim of the Government's policy in the water sector is to promote the rational use of water and to protect water resources. It also aims to improve the efficiency and reliability of the country's water sector management, ensuring guaranteed water delivery and providing essential services both to society and natural ecosystems for the reconstruction, operation and maintenance of the existing infrastructure. The National Environmental Action Plan predetermines state policy aimed at improving the quality of surface water and groundwater.

However, for the restoration of drinking water supply and sanitation networks, as well as for the construction of new drinking water pipelines and sewage infrastructure, large amounts of money are necessary, requiring international funding to solve problems in the mid- to long-term period.

For industrial wastewater, the vodokanals regularly call for local wastewater treatment at the industrial site. If discharges occur without permission, immediate remediation is required.

On the basis of the scientific research of Uzstandard, the group of experts of relevant ministries and departments performs research on harmonizing the national standard O'z DST 950:2000 on drinking water: hygiene requirements for quality.

Recommendation 5.6:
(a) The State Committee for Nature Protection should establish Maximum Allowable Concentration (MAC) for highly toxic substances such as mercury, cyanides and chromium- and strengthen the existing MAC in line with WHO and EU standards. The Ministry of Agriculture and Water Management (MAWM) should enforce these standards and implement the requirements of the NEAP for treatment of toxic wastewater discharged by industry. (b) The MAWM and the Agency of Municipal Services should create the necessary financial resources for the implementation of the Plan on Water Supply Development, in particular by introducing of metering and appropriate pricing for water consumption.

The Sanitary and Epidemiological Supervision Department of the Ministry of Health has chemical, biological and radiological laboratories with modern equipment such as atom absorption spectroscopy, high-performance liquid chromatography and enzymatic analysis (PCR). The lists of substances that can be analysed are in accordance with World Health Organization (WHO) and MAC lists.

Since 2001, additional MACs have been introduced for mercury and chromium. Drinking water and groundwater for drinking purposes are analysed according to the national standard O'z DST 950:2000 on drinking water: hygiene requirements for quality.

Under item 2.2 of this national standard, if a water source is polluted by substances that are hazardous to human health, yet not included in the standard, territorial bodies of the Sanitary and Epidemiological Supervision Department can take decisions to introduce additional quality assurance for defining these substances and estimating their harmlessness according to their MACs.

Recommendation 5.7:
In implementing the Plan on Fresh Ground Water Use and Saving the Ministry of Agriculture and Water Management should urgently take measures to reduce the use of clean ground water for industrial and

irrigation purposes with the long-term aim to restrict the use of ground water to the supply of drinking water for the population.

In many regions, the use of surface water instead of groundwater is not possible. A special licence is required for enterprises that need to use groundwater for industrial purposes, on the basis of a hydrogeological study in order to use the groundwater resources economically.

In addition, in recent years the share of industrial water recycling has been increasing. The highest rate of water recycling is reported for the industrial enterprises of the Tashkent, Navoi and Fergana regions, which also contributes to saving fresh groundwater.

Chapter 6: AIR POLLUTION

Recommendation 6.1:
The State Committee for Nature Protection and Glavhydromet should reorganize and strengthen the monitoring network; technical capacities for air quality monitoring should also be improved, including the introduction of automatic methods as well as alternate methods such as diffusion sampling for measuring air pollutants and processing air emissions data. Glavhydromet should also monitor PM_{10}. Measures should be taken to improve the technical capacities for evaluating and monitoring air pollution. In this connection training activities should also be undertaken.

Air quality monitoring has discontinued in two cities since 2002 owing to the lack funds. The Centre of Hydrometeorological Service (Uzhydromet) monitors air quality at 66 fixed monitoring stations in 25 cities in the country. The number of mobile laboratories has decreased by 36 per cent since 2002. Air concentrations of PM_{10} are not measured in Uzbekistan. Sampling is still carried out manually following a shorter version of the programme at most stations. The SCNP, through the State Specialized Inspectorate for Analytical Control, monitors emissions at 141 enterprises monthly. The Inspectorate develops methods for measuring polluting substances in emissions and discharges. Annually, it conducts inter-calibration exercises with the analytical laboratories of Uzhydromet, the State Committee on Geology and Mineral Resources and the Ministry of Health.

Recommendation 6.2:
The State Committee for Nature Protection and the Uzbekavtoprom Association -in cooperation with enterprises involved- should take the following measures to reduce the adverse environmental effects of the transport sector: • Revise existing air emission standards and develop and implement new, realistic and scientifically justified emission standards, including strict standards for the lead content of petrol that meet EU requirements; • Speed up the phase-out of leaded petrol.

According to the 2006 Presidential Decree No. PP-531, since 1 March 2007 all imported vehicles of the M2, M3 and N2 categories should comply with the Euro 2 emission standard or higher, and after 1 January 2010 with the Euro 3 standard or higher. This was seen to a greater extent as a measure to support the local production of buses and trucks in Samarkand (SamAuto). In order to implement these requirements, the SCNP and Uzstandard adopted on 28 February 2007 the temporary instructions on the environmental certification of imported vehicles of the above categories. For that purpose, the SCNP State Board for Environmental Certification, Standardization and Norms serves as the eco-certification body. In 2006, the SCNP also approved the new technical requirements for locally produced cars and microvans of the Daewoo Matiz, Nexia and Damas models, which are considered as being equivalent to the Euro 0 standard.

It was expected that the production of lead petrol in Uzbekistan would be phased out in 2008. However, there is still national production of lead petrol, which currently accounts for around 10 per cent of the total oil production. Lead petrol imports were reduced from 98.5 per cent in 2005 to 65 per cent in 2006. According to the SCNP, because of the above measures, Uzbekistan reduces air emissions of lead compounds by more than 300 tons annually. So far, recommendation 6.2 has not been fully implemented; nonetheless, it is likely that Uzbekistan will apply the Euro 2 standard to cars in the near future.

Recommendation 6.3:
The Municipalities, organisations and bodies involved in the exploitation of transport, should take urgent steps to: • Replace old cars, buses and trucks; • Increase the use of natural gas as motor fuel, in particular in public transport; • Improve car-repair services and make the technical inspection of all vehicles mandatory; • Improve road quality and road infrastructure in large cities and in the country as a whole.

In recent years, the stock of vehicles has been renewed, with new vehicles being produced in Uzbekistan and imported to the country. During the last three years, vehicle production in Uzbekistan has increased by 3 times.

By 1 January 2007, more than 102,000 vehicles were re-equipped to work on gas fuel. The Programme of Actions on Nature Protection for 2008–2012 envisages the re-equipment of another 15,000 vehicles to work on gas fuel.

Car-repair services have been further improved. The regional enterprises of the stock association Uzautotekhkhimzmat of the joint stock company Uzautosanoat are equipped with diagnostic tools, gas-control equipment and devices to control toxicity and exhaust opacity. Technical inspections are mandatory for all vehicles: once a year for buses and taxis; twice a year for all other vehicles. The Ministry of Internal Affairs is responsible for carrying out technical inspections.

Road quality and road infrastructure in the country as a whole, and in large cities (Tashkent, Samarkand, Bukhara, Fergana, Karshi, Nukus) in particular, have been improved.

Recommendation 6.4:
The concerned sectors of Ministries and the industrial enterprises should make all possible efforts, including providing the financial resources, to install or modernize abatement technologies to reduce gas emissions and dust from industrial installations. The following measures should be taken urgently: • Environmental audits should be carried out at industrial enterprises; • Modern abatement technologies should be installed to reduce air pollution.

According to the SCNP, measures to reduce air pollution, such as the modernization of dust and gas cleaning systems, were taken by a number of large enterprises, including the Almalyk Mining and Processing Combine, the Navoi Mining and Metallurgical Combine and Uzmetkombinat (Metallurgical Plant in Bekabad). The 2007 Programme on the Technical and Technological Modernization of Facilities for the Production of Construction Materials for 2007–2011 addresses funding by the State and industrial enterprises for certain measures to reduce dust from cement installations. Also, the Programme of Actions on Nature Protection for 2008–2012 defines, as a measure to reduce air emissions from the energy sector, the modernization of the electrostatic precipitators at the Novo-Angren thermo power plant and indicates international organizations as the source of funding.

Despite the above-mentioned measures by the Government and enterprises aimed at reducing air pollution, there is a lack of such environmental investments in the energy, oil and gas sectors, which are major air pollution sources in Uzbekistan. Some reductions in air pollution in the energy sector during the reviewed period were achieved mostly because of an increase in the percentage of gas used for energy production instead of coal and black oil. However, in accordance with the 2002 Programme of Coal Industry Development for 2002–2010, it is planned that there will be an increased proportion of coal in the fuel resources structure in electricity production of up to 15 per cent (9.4 million tons) in 2010, in comparison with 4.7 per cent (2.7 million tons) in 2001.

In general, the implementation of recommendation 6.4 addressed by the first EPR to the ministries and industrial enterprises of Uzbekistan and requesting them to install and modernize abatement technologies was only partial and rather weak. Also, as mentioned in chapter 2 of the review, the environmental audit instrument is very rarely used in Uzbekistan and, in this respect, recommendation 6.4 has not been implemented by the country.

Recommendation 6.5:
The State Committee for Nature Protection should: • Revise and introduce emission standards for harmful air pollutants that are consistent with EU standards; • Use economic incentives to encourage the introduction of cleaner production technologies (reduced taxes for environmental equipment, low charges for improving environmental protection at enterprises) • Harmonize the air quality standards with WHO guidelines on ambient air. See also Chapter 12

In 2006, the new rules for setting emission limit values for ambient air were adopted in Uzbekistan: Instructions on Inventories of Pollution Sources and Setting of Air Emission Limits for Enterprises. However, the system for setting emission limit values for air pollutants still follows the soviet approach based on MACs. They are thus different from European Union (EU) emission standards, and, unlike the EU countries, Uzbekistan does not apply gradually increasing requirements on the reduction of emissions from industrial sources of air pollution and improvements in air quality.

In 2004, Uzbekistan adopted the new hygiene standards on ambient air quality in human settlements: Sanitary Rules and Standards No. 0179-04. They set MACs for 656 polluting substances and for 4 main air pollutants (dust, nitrogen oxides, sulphur dioxide and ozone). The new air quality standards adopted in Uzbekistan seem consistent with the WHO guidelines on air quality.

Despite the adoption of the new rules on setting emission limit values and the harmonization of air quality standards with WHO guidelines on ambient air, recommendation 6.5 was implemented by Uzbekistan only partially. Emission standards for harmful air pollutants are inconsistent with EU standards, and economic incentives for enterprises to promote the use of environmentally friendly technologies have not yet been implemented.

Positive economic incentives for the introduction of environmentally friendly technologies are weak, although some tax breaks are available. Environmental authorities certify that the equipment purchased fulfils the necessary requirements. Negative economic incentives, in the form of pollution charges, play a more general role (See recommendation 2.1).

Recommendation 6.6:
The State Committee for Nature Protection and the Ministry of Justice should further develop the Law on the Protection of Ambient Air, and revise existing regulations and develop new regulatory documents for its implementation.

This has not yet been carried out. However, in March 2005, the SCNP submitted its proposed plan for new legislation for 2005–2010 to the Cabinet of Ministers. The plan includes a revision of the 1996 Law on Ambient Air Protection.

Recommendation 6.7:
The State Committee for Nature Protection should speed up the process of accession to the UNECE Convention on Long-range Transboundary Air Pollution so that Uzbekistan can participate actively in the cooperation on air management in the UNECE region. (See also Recommendation 4.2)

Uzbekistan has not yet acceded to the UNECE Convention on Long-range Transboundary Air Pollution.

Chapter 7: WASTE MANAGEMENT

Recommendation 7.1:
An integrated national waste management strategy on ways and means should be drawn up as a joint effort of all stakeholders. The State Committee for Nature Protection should in the short term bring together other stakeholders, including the Ministry of Health, the Ministry of Agriculture and Water Management, the Agency on Communal Services and non-governmental organizations, and start the process of developing such a national strategy. Assistance from donor countries might be sought.

The SCNP, together with the Ministry of Health, the Uzcommunkhizmat Agency, the Sanoatkontekhnazorat State Inspectorate and the other ministries, agencies and organizations concerned, with financial and technical support from the United Nations Development Programme, the New Zealand International Aid and Development Agency and the Slovak Agency for International Development Cooperation, has prepared a draft national waste management strategy. In 2007, the Senate Committee on Agrarian Issues, Water Management and the Environment approved a draft national waste management strategy and an action plan for the period 2008–2017.

Recommendation 7.2:
Within the Goskompriroda, a department for waste management should be established with at least four waste management specialists with different expertise (hazardous waste, medical waste, non-hazardous industrial waste and municipal solid waste) and with the necessary support staff.

The Committees for Nature Protection of the Republic of Karakalpakstan, Tashkent City and the regions have separate waste management inspectorates. However, a waste management department within the Headquarters of the SCNP has not yet been established. It is quite difficult to resolve this issue as a decision to increase staff numbers should be made by the Ministry of Economy and the Ministry of Finance.

Recommendation 7.3:
An effective, mandatory and enforced reporting and data collection system should be developed and implemented as soon as possible. The system should include data processing, presentation and dissemination. The system should be run and operated by the future department for waste management. Cooperation with the Ministry of Macroeconomics and Statistics is required.

All enterprises and organizations that generate all classes of hazardous waste must annually submit a "3-ecology" (hazardous waste) statistical form. The completed form should be approved by the SCNP or its regional committees.

Recommendation 7.4:
A special, separate management scheme for hazardous medical waste that ensures its adequate disposal and includes mechanisms to render it harmless should be set up, at first on a pilot scale. The pilot project should be implemented as a joint effort by the Ministry of Health and the State Committee for Nature Protection with the support of oblast authorities, local authorities, hospitals and other stakeholders.

The Committees for Nature Protection of the Republic of Karakalpakstan, Tashkent City and the regions, together with the regional bodies of the Ministry of Health, are responsible for hazardous medical waste management. There are about 110 medical waste incinerators across the country.

Recommendation 7.5:
As soon as possible, the Ministry of Agriculture and Water Management and the State Committee for Nature Protection, should take initiatives to collect, process, utilize or destroy obsolete pesticides. One of the actions to be taken should be the construction of a central temporary storage site. In this case, processing and destruction of the obsolete pesticides could be postponed to the medium term.

There are 13 obsolete pesticide and chemical storage facilities in Uzbekistan. Some of them do not meet environmental and sanitary safety standards. The SCNP, the state stock company Uzkimesanoat and the Ministry of Health, together with the regional authorities, have prepared a draft complex plan of actions to ensure the environmental safety of the storage facilities.

Recommendation 7.6:
Burning of waste in city streets, temporary storage points and containers should be prevented as much as possible both by enforcing bans as well as by providing an adequate service. Solutions should be found and implemented at local level by local authorities and organizations such as the Uzkommunalhizmat.

The SCNP carries out preventive measures against the burning of waste in city streets. The measures also include public awareness-raising campaigns.

Recommendation 7.7:
Suitable infrastructure available in Uzbekistan should, to the extent possible, be used for waste disposal. In the short term, cement kilns could be adapted for the incineration of waste tyres and hazardous waste with a high caloric value (organic compounds, including pesticides). The result would not only be the proper destruction of the waste but also a reduction in the fuel requirements of the cement factory involved. Waste incineration in cement kilns should be achieved through negotiations between the State Committee for Nature Protection and the operators of the cement plants. The cost of adapting a cement kiln for waste incineration depends largely on the actual cement production process and on the types of waste (liquid, pasty, granulated or solid) to be incinerated.

Cement kilns have not yet been adapted for the incineration of waste tyres and hazardous waste with a high caloric value (organic compounds, including pesticides).

Chapter 8: BIODIVERSITY MANAGEMENT

Recommendation 8.1:
The State Committee for Nature Protection should, as soon as possible, be recognized as the only government body responsible for the development and management of a unified protected area system. Appropriate legal, institutional and budgetary provisions should be made for this purpose.

This has not been done yet and the situation regarding the management of a protected natural area system remains unclear. The revised 2004 Law on Protected Natural Areas simply stipulates that the management of the protected territories is carried out by the Cabinet of Ministers, local governance bodies and special authorized government bodies. Although the special authorized government bodies are not named, in current practice the authority is divided between the Forestry Management Department within the Ministry of Agriculture and Water Management, the State Committee on Geology and Mineral Resources, the SCNP and the Tashkent Regional Mayor, along with the Cabinet of Ministers and local authorities.

Recommendation 8.2:
In accordance with the Biodiversity Conservation National Strategy and Action Plan, the State Committee for Nature Protection should, as soon as possible, develop a medium to long-term plan for the development of a protected area network covering a representative sample of natural ecosystems, comprising at least 10% of the State's territory. The process of extending the protected areas should focus on maximizing national and global nature protection and biodiversity benefits, minimizing socio-economic impact and integrating international best practices. Implementation of the plan must ensure the participation and cooperation of all relevant stakeholders, including national and local government bodies and local communities.

This recommendation has not yet been implemented. See chapter 7.

Recommendation 8.3:
To achieve the objectives of a sound and sustainable management system for protected areas and to meet the international requirements for public participation, the State Committee for Nature Protection should develop and test the legal, institutional and managerial mechanisms needed to increase public participation in protected area management, taking into account the requirements of the Aarhus Convention.

The 2004 Law on Protected Natural Areas establishes that local communities must take part in the development of management plans for protected natural areas. In 2006, the SCNP prepared proposals for amendments to relevant national legislation so as to make it consistent with the 2004 Law as well as draft regulations on procedures for the development of protected natural area management plans, on a protected natural area "passport" and on the organization of visits by the public to protected natural areas. The adoption of these legal and regulatory initiatives by the Government is pending.

Recommendation 8.4:
The State Committee for Nature Protection with facilitation of Ministry of Finance, the Ministry of Macroeconomics and Statistics, and the Ministry of Agriculture and Water Management, should develop economic instruments and mechanisms for ensuring adequate financing for the implementation of the Biodiversity Conservation National Strategy and Action Plan.

The 2004 Cabinet of Ministers Resolution on the Enhancement of Oversight of the Rational Use of Biological Resources and their Imports and Exports defines payments for the use of natural resources. The 2008 Programme of Actions on Nature Protection for 2008–2012 envisages some measures to support the realization of the National Programme on Biodiversity and its Action Plan, including the preparation of a draft resolution by the Cabinet of Ministers on the creation of a protected natural areas network, the development of a programme for the sustainable use of biological resources and the development of infrastructure for the protection of fisheries. The main sources of financing for these actions are the National Fund for Nature Protection, the State Biodiversity Inspectorate and the Ministry of Agriculture and Water Management.

Recommendation 8.5:
Under the leadership of the State Committee for Nature Protection, the Academy of Science and other scientific institutions, an efficient and cost-effective biodiversity monitoring system should be established to provide the necessary information for effective biodiversity management and decision-making.

In accordance with the 2000 Cabinet of Ministers Resolution on the Adoption of the Regulations on the State Cadastre of the Flora of the Republic of Uzbekistan and the Regulations on the State Cadastre of the Fauna of the Republic of Uzbekistan, the SCNP was designated as the public authority responsible for preparing and updating the two cadastres in question. In 2006, the SCNP created the Division on Monitoring and Cadastres at its State Inspectorate for the Protection and Rational Use of Flora and Fauna and Nature Reserves. The results of its activities include maps of plant communities in the Jizzakh and Navoi regions, the inventory of wildlife in two areas in the Republic of Karakalpakstan and the reports on animal life in the Kashkadarya and Surkhandarya regions. The Division is currently preparing a report on herpetic fauna of Uzbekistan in the form of a cadastre.

Recommendation 8.6:
To protect and improve its extremely vulnerable and degraded wetlands, and meet international obligations concerning the maintenance of habitats for migratory species, Uzbekistan should, develop an integrated national wetland conservation plan.

With the entry into force of the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) in 2002, and the designation of two wetlands under the Convention, a big step towards the implementation of this recommendation has been undertaken. However, the relationship with protected natural area governance structures and species protection needs to be developed, as well as a national wetland policy and an integrated national wetland conservation plan.

Uzbekistan faces a situation where almost all wetlands serve as collectors for drainage waters; their water levels and their very existence completely depend on water availability in the collector–drainage system. Water availability in the system depends almost entirely on agricultural activities. In view of existing water scarcity, this is an unfair battle since the agricultural use of water will always have preference over maintaining ecologically important wetlands, even designated wetlands of international importance under the Ramsar Convention.

Measures to preserve biodiversity in wetlands, including species protection, have been undertaken by the SCNP and local protection authorities (rangers and foresters) with varying degrees of success.

In 2004, Uzbekistan became a party to the Agreement on the Conservation of African-Eurasian Migratory Waterbirds. It also signed the Memorandum of Understanding concerning Conservation Measures for the Siberian Crane (Grus leucogeranus) in 1998, and the Memorandum of Understanding concerning Conservation Measures for the Slender-billed Curlew (Numenius tenuirostris) in 1994, both agreed under the Convention on Migratory Species. It has not signed the 2008 Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia. However, there is no evidence that these measures have been specifically implemented.

Recommendation 8.7:
Due to the high biological and ecological importance of forests, the Forestry Department, currently established within the Ministry of Agriculture and Water Management, should be institutionally strengthened.

The new structure of the Ministry of Agriculture and Water Management was approved by the 2003 Cabinet of Ministers Resolution on Improvement of the Activities of the Ministry of Agriculture and Water Management. The Forestry Management Department is an autonomous body under the Ministry, with its Head being the Deputy Minister.

Recommendation 8.8:
All sectors that benefit from forests, particularly water management and agriculture, should contribute to the financing of forest protection and reforestation. In this connection, the Forestry Department should prepare a proposal on financing forest management for the Cabinet of Ministers.

The Ministry of Agriculture and Water Management has the main responsibility for the management of forest resources. The Forestry Management Department within this Ministry determines procedures and methods for reforestation. According to the 1999 Law on Forests, resources for forest protection and rational forest use are raised through the state budget and other means. However, there are no explicit financing mechanisms for other sectors to contribute to the financing of forest protection measures.

Chapter 9: MINERAL RESOURCES

Recommendation 9.1:
A broad assessment of the present environmental status of tailings from mining operations and other mineral industry hot spots is necessary in order to draw up an efficient plan for environmental impact prevention and mitigation. The State Committee for Nature Protection should develop a medium-term plan for this purpose under the NEAP. Funds for its implementation may be acquired through international donor organizations. They may also be allocated from the State budget.

An analysis of radioactive waste management in national and transboundary contexts and an assessment of the waste's impact on the environment have been carried out. The Programme of Actions on Nature Protection for 2008–2012 contains the following measures:

- Deactivation of the contaminated area in the Tashkent region (Yangiabad);
- Construction of an anti-radiation barrier on the tailing dam of the Metallurgical Enterprise No. 1 in Navoi;
- Environmental remediation on the territory of the former uranium mine No. 23 in the Papskiy district of the Namangan region;
- Remediation of the land degraded by mining activities in the Navoi (1,000 ha), Bukhara (500 ha) and Samarkand (500 ha) regions.

Recommendation 9.2:
The State Committee for Geology and Mineral Resources, in cooperation with the State Committee for Nature Protection, should initiate a revision of the current mineral legislation in order to (a) address environmental

matters in mineral exploration, exploitation, processing, mine closure, post-closure (maintenance) and mineral waste recycling and recovery, (b) introduce mechanisms to define past, ongoing and future environmental liability, particularly for land rehabilitation after mine closure, and (c) introduce a financial guarantee requirement in mining that would generate funds to be used either during extractive operations to address potential ongoing environmental damage or for reclamation. See Recommendation1.4

The 2002 Law on Subsoil addresses some of these issues. Specifically, the Law stipulates that the mining industry is responsible for ensuring the environmental protection and restoration of damaged land areas and other natural sites disturbed during excavation. This responsibility has no period of expiration, but it does not apply to past pollution or degradation. The industry is also responsible for using subsoil only for the purposes licensed, following technical documentation and project design documents that have undergone environmental impact assessment, avoiding certain procedures, such as side-by-side or spot excavation, following established procedures for waste management, waste disposal and conservation, and undertaking actions against erosion. Overall, it is responsible for ensuring the rational use of the area and for preserving any valuable components.

The 2002 Law on Waste stipulates procedures for waste management, including recycling and waste reduction. The cost of carrying out these activities is borne by the enterprise, but possible sources of financing are available, as appropriate. These sources include wildlife management funds, the state budget, extrabudgetary resources and voluntary payments from legal and physical persons.

Recommendation 9.3:
The State Committee for Nature Protection, in conjunction with the State Committee for Geology and Mineral Resources, should continue to develop the regulatory system for the management of mineral resources. Particular attention should be paid to (a) the development and implementation of EIA and environmental audit guidelines, with specific requirements for EIA in mining, (b) the introduction of an accreditation system for independent firms performing EIA and environmental audits, (c) the enhancement of public participation in the EIA process, and (d) the adoption of formal environmental management as a requisite for the issuing of licences to mining companies. See Recommendation 3.3

The 2002 Law on Subsoil contains a chapter on the rational use and protection of subsoil. Also, the current Law on Subsoil does not include specific provisions on environmental impact assessment and environmental audits in the mining industry. In general, during the reviewed period no specific requirements for environmental impact assessments in the mining industry were developed by Uzbekistan. This can be seen as a step backwards with regard to environmental protection requirements in comparison with the previous law on subsoil.

General provisions on environmental impact assessment and environmental audits are still part of the legislation on state ecological expertise. The 2001 Regulations on State Ecological Expertise stipulate the list of activities subject to state ecological expertise and the procedures of state ecological expertise and environmental impact assessment. However, the legislation on state ecological expertise does not provide detailed regulations on the environmental impact assessment procedure and environmental audits (chapter 2). As regards the practical application of the environmental audit instrument, it is still rarely used in Uzbekistan and mostly only by foreign enterprises. For example, in 2004 audits were conducted on certain gas fields of the Kandym–Khauzak–Shady–Kungrad project. In general, it can be concluded that recommendation 9.3 has not been implemented by Uzbekistan.

Recommendation 9.4:
The industrial cleaner production programme should be developed as part of the NEAP and a national cleaner production centre should become as the main institution for promoting cleaner production methods in Uzbekistan. Specific pilot projects in the mining industry, particularly with respect to waste-water treatment and air pollution abatement technologies, should continue to be promoted and implemented.

With the support of the United Nations Industrial Development Organization, the Clean Technologies Centre was established and 10 projects were carried out at the enterprise level. The Clean Technologies and their Introduction Programme is being carried out. In 2007, the Senate Committee on Agrarian Issues, Water Management and the Environment approved a draft national waste management strategy and action plan for 2008–2017, which recommends introducing cleaner production and technologies. Specific environmental protection measures in the mining industry are also envisaged in the Programme of Actions on Nature Protection for 2008–2012.

Recommendation 9.5:
The Government should restructure the State Committee for Geology and Mineral Resources and create a national geological survey as a top priority.

The State Committee on Geology and Mineral Resources has been reorganized twice: once to reflect a new management structure and the second time to reflect a re-prioritization of issues that, among others, has put greater focus on environmental protection and groundwater resources.

Through its Research Institute of Mineral Raw Materials, the State Committee on Geology and Mineral Resources has a permanent Geological Environmental Expedition Survey Team, which partners the SCNP for conducting subsoil evaluations. The Team has recently completed a new inventory and re-evaluation of national resources.

Recommendation 9.6:
The State Committee for Geology and Mineral Resources should improve its monitoring system, specifically in terms of data collection, processing and dissemination. Priority should be given to provide computer equipment, and mobile devices, as well as to develop centralized databases for (a) mineral resources, (b) dangerous geological processes, in particular landslides, and (c) groundwater.

The State Committee on Geology and Mineral Resources has created databases on groundwater and mineral resources. It publishes an annual information bulletin on the state of groundwater and mineral resources and their use.

Recommendation 9.7:
The regional cooperation programme for the rehabilitation of hazardous mining tailings with a transboundary pollution impact should be implemented immediately. Funds for this purpose should be allocated from the State budget, and raised from international financing institutions.

Uzbekistan actively participates in regional cooperation on the issues of uranium tailings in Central Asia. Despite the intergovernmental agreements on waste management in the Central Asian region, implementation is being delayed due to the lack of the financial and technical resources required for implementing the recommended measures and actions.

In order to attract the attention of the international community and to mobilize donor assistance to minimize the impact of uranium waste on the population and the environment, some international meetings have recently taken place, namely the Regional Conference on Uranium Tailings: Local Problems, Regional Consequences, Global Solutions, held in Bishkek (21–24 April 2009), and the High Level International Forum on Uranium Tailings in Central Asia, held in Geneva, Switzerland (29 June 2009). During the latter meeting, a Joint Declaration was adopted and Forum participants pointed out that the Central Asian region required additional financial and other resources to manage and maintain the uranium and other toxic tailing sites at safe levels.

PART III: ECONOMIC AND SECTORAL INTEGRATION

Chapter 10: LAND, AGRICULTURE AND THE ENVIRONMENT

Recommendation 10.1:
The Ministry of Agriculture and Water Management, the State Committee on Land Resources and the State Committee for Nature Protection should improve land and water legislation, with a special focus on the development of mechanisms for its implementation as well as market economic mechanisms, which stimulate land users to conduct anti-erosion and other measures for protection and rational use of land and water resources and which create conditions for profiting from agricultural activities. (See Recommendation 5.4)

Legislation on both land and water use is in an active stage of development. Both the 1998 Land Code and the 1993 Law on Water and Water Use are being revised and will be finalized in the near future. With regard to the use of market economic instruments, only limited progress resulting in improved environmental performance can be observed. See new recommendation 7.4.

Recommendation 10.2:
The Ministry of Agriculture and Water Management, in cooperation with the State Committee for Nature Protection, should develop a law on soil fertility. This law should incorporate both economic mechanisms and agro-ecological mechanisms in an effort to increase soil fertility and improve the state of the soils overall.

The recommendation has not yet been implemented.

Recommendation 10.3:
The Ministry of Agriculture and Water Management, in cooperation with the State Committee for Nature Protection, should identify sites in different ecological or agricultural zones for the implementation of pilot projects that can illustrate the value of agricultural reform and sectoral development and attract external investment.

Pilot projects and demonstration activities are taking place relatively abundantly. The level of research is convincing. The weak point in bringing the existing knowledge to the benefit of agricultural producers is a deficient educational and agricultural extension service. The existing support infrastructure has not only been insufficient, but is also incapable of adapting to changes in the structure of production and production units. The rehabilitation of marginalized land has not been addressed sufficiently.

Recommendation 10.4:
The Cabinet of Ministers and the State Committee for Nature Protection should facilitate dialogue with all stakeholders and engage their cooperation in repairing damage caused to land and improving agricultural practices in order to reduce the environmental pressure on land.

Land reform, with major changes in farm structures and the development of water user associations, has been one form of dialogue. It has not, however, until now been centred on repairing damage and land improvement. During the preparation of the new land code, since 2006 the views of water user associations and farmers' organizations were reportedly taken into account.

Recommendation 10.5:
The Ministry of Agriculture and Water Management should introduce and implement environmentally friendly methods of agricultural production and integrated plant protection against pests and diseases to prevent increasing food contamination.

The introduction of integrated pest management and decreasing the use of the most harmful pesticides has been a consequent government policy. Also, in terms of the overall use of pesticides, the results are convincing, with levels of less than 1.5 kg/ha, compared with more than 15 kg/ha during the soviet regime.

Recommendation 10.6:
The Ministry of Agriculture and Water Management should made all efforts to upgrade and repair existing irrigation and drainage systems, as well as apply modern and efficient irrigation methods and technologies.

The State Programme for the Amelioration and Improvement of Irrigated Lands for 2008–2012 has been started. However, the continuation of the improvement of irrigation systems is still addressed and recommended in the current review, among others, the compatibility of the state programme with the necessary improvements at the water user association and farm level, and the support needed for the latter.

Recommendation 10.7:
The Ministry of Agriculture and Water Management and the State Committee for Nature Protection and State Committee on Land Resources should improve both short- and long-term planning for the use and management of agricultural land.

During the period 2001–2009, environmental concerns have been increasingly streamlined into legislation and the institutions responsible for decision-making. International cooperation in the framework of the relevant conventions, as well as regional cooperation, for example in the framework of the Central Asian Countries Initiative for Land Management, is providing valuable inputs for better management. For economic, socio-economic and sometimes political reasons, a sufficiently improved performance has not been achieved. Many of the new recommendations in this sphere relate to the seriousness of the consequences of global climate change.

Chapter 11: ENVIRONMENT AND ENERGY

Recommendation 11.1:
The respective Parliamentary Commission should revise and strengthen the enforcement of the Law on the Rational Use of Energy. In this connection a team of experts should be established to propose amendments to the Law and guidelines for its enforcement.

To comply with this recommendation, the 1997 Law on the Rational Use of Energy was amended in 2003. The responsibilities of the state control and supervision of energy efficiency, the rational use of energy and energy quality were given to the Agency for Standardization, Metrology and Certification of Uzbekistan (Uzstandard). A number of by-laws have also been adopted, including the 2003 Cabinet of Ministers Resolution on the Approval of Regulations on the Use of Electrical and Thermal Power.

Recommendation 11.2:
Each sector of the economy should draw up and adopt an energy conservation programme and integrate it into its long-term strategy and policy. These requirements should be introduced in the Law on the Rational Use of Energy and the forthcoming national energy conservation programme. Additional technical energy-saving measures should be adopted and implemented in the most energy-intensive sectors.

The 1997 Law on the Rational Use of Energy contains provisions on national, sectoral and regional programmes on the rational use of energy (Article 12). The programmes can be initiated by the Cabinet of Ministers, ministries and agencies and regional authorities. In accordance with the Law on the Rational Use of Energy, in 2002 the Cabinet of Ministers adopted the Programme on Energy Efficiency until 2010. A few Cabinet of Ministers resolutions have also been adopted, namely, the 2005 Resolution on Measures to Implement a Comprehensive Programme of Introducing Energy Saving Technologies in Communal Services and the 2006 Resolution on the Approval of the Programme of Replacing Obsolescent and Inefficient Boiler Units in Enterprises and Organizations for 2007–2008.

Recommendation 11.3
To provide financial support for government policies on the promotion of rational energy use, the Government should create, as soon as possible, an energy conservation fund with contributions from energy-saving

initiatives and projects. Such a fund would facilitate the implementation of energy-efficient and environmentally sound technologies, new and renewable resources, and non-waste technologies. The creation of such a fund was foreseen in the Law on the Rational Use of Energy, but no fund was established.
This recommendation has not yet been implemented.

Recommendations 11.4:
The State Centre for Standardization (UzGosStandard) with active participation of the State Committee for Nature Protection, Uzbekneftegas and UzbekEnergo should revise the fuel-quality standards, including GOST standard 10 585-75, to limit sulphur content in heavy oil to a maximum of one per cent, set specific fuel consumption norms and emission ceilings for each power plant and set up specific energy consumption norms for the different sectors and activities.

This recommendation has not yet been implemented.

Recommendations 11.5:
The Ministry of Macroeconomics and Statistics should set fuel prices according to fuel quality, or allow producers and users to negotiate these prices.

This recommendation has not yet been implemented.

Chapter 12: HUMAN HEALTH AND THE ENVIRONMENT

Recommendation 12.1:
• The Ministries of Transport and Health and the State Committee for Nature Protection should develop a comprehensive approach to the improvement of transport-related health effects, building on the strategies and plan of actions of the WHO Charter on Transport, Environment and Health.• The Ministry of Health and the State Committee for Nature Protection, in collaboration with relevant industries, should continue the implementation of appropriate technical measures (e.g. filters) to reduce emissions from localized point sources, such as factories and energy plants. A combination of incentives and repressive measures (inspections and fines) should be used to promote technological improvements. • The Ministry of Health should promote research to clarify the health impacts of dust, especially the short and long-term effects of exposure to dust contaminated by pesticide residue on the respiratory system. • Glavhydromet and the State Committee for Nature Protection should reorganize the air pollution monitoring network, building on possible synergies between the equipment and facilities available to the Ministry of Health. Air quality monitoring could be made more useful for assessing health effects if some monitoring stations were relocated to places that are more representative of population exposure and if the measuring of TSP was replaced with PM_{10}, a more reliable indicator of human exposure to particulate matter. • The comprehensive programme should also harmonize air quality standards with the WHO Guidelines on Ambient Air. See Recommendation 6.1

The Sanitation and Hygiene Research Institute of the Ministry of Health developed a standard on the maximum allowable concentrations for particulate matter (PM10), SanPiN No. 0179-04: Hygienic specifications: The list of maximum allowable concentrations of polluting substances in ambient atmospheric air in the territory of the Republic of Uzbekistan. However, the monitoring of particulate matter (PM10) has not yet been carried out.

Recommendation 12.2:
• The Ministry of Health and the food industry should adhere to and implement the WHO food and nutrition action plan as a matter of urgency. • Local needs assessments and inter-sectoral collaboration (e.g. between veterinary services and Ministry of Health food monitoring structures) should be included in local food protection programmes. • A code of hygiene practices should be distributed to all food industries and local authorities. • The Hazard Analysis and Critical Control Point (HACCP) system should be implemented. • Food handlers should be trained in the principles of food safety and hygienic handling of food. • Information gathering and dissemination should be strengthened, including surveillance of food-borne diseases. • Information campaigns to combat botulism should be improved. • Research should be carried out to clarify

the health consequences of consuming food (e.g. milk and dairy products, butter, animal fats and oils) contaminated by pesticides or their by-products.

The improvement in the hygiene safety of food and nutritional value of raw materials and foodstuffs was established through sanitary–epidemiological rules and norms (SanPiN No. 0138-03). The quality control of food commodities and food products is carried out in collaboration with the veterinary service by Uzstandard within the Ministry of Agriculture and Water Management. The Hazard Analysis and Critical Control Point (HACCP) also exists for enterprises in the dairy and meat industry.

The next challenges are as follows:

1. The development of new SanPiN standards: "Hygiene requirements for the shelf life and storage conditions of food products"; "Hygiene requirements for the use of nutritional supplements that will ration the use of food additives, taking into account the consumption of food and a contingent of consumers"; and "Hygiene requirements for the production of milk and dairy products";
2. The introduction of mandatory certification for food and biologically active additives;
3. The development and approval of regulations on compulsory state registration of biologically active food additives;
4. The development of a regulatory framework for the organization of the state control of genetically modified organisms and products.

Recommendation 12.3:
The Ministry of Health should implement measures for the safe disposal of hospital waste, in particular with respect to the safe disposal of syringes. See Recommendation 7.4 The incidence of hepatitis B calls for an enforcement of hygienic measures, in particular the use of sterile, single-use disposable syringes and other medical devices and equipments.

The Sanitation and Hygiene Research Institute of the Ministry of Health had developed the standard on "sanitary rules and standards for the collection, storage and disposal of medical establishments" (SanPiN No. 0149-04). Medical waste management (collection, sorting, neutralization, transportation and processing) was improved through the management of the 3,500 countrywide incinerators for hospital waste under the activities of the Strategy and Action Plan for Waste Management.

Recommendation 12.4:
The Ministry of Health and the State Committee for Safety in the Manufacturing and Mining Industries in cooperation with enterprises and workers' representatives should: • Reintroduce individual protective measures and provide workers with information about their occupational health risks; • Apply economic instruments to encourage enterprises to observe health and safety standards, as well as to report all occupational diseases; • Take into greater account the psychological and social dimensions of occupational health; • Improve the registration of occupational diseases and injuries at regional level and across all economic sectors using general registration criteria and providing detailed and accurate information.

By decision of the Coordinating Council, the number of audits of industrial enterprises is strictly regulated. In 2002, public health surveillance covered 31.1 per cent, and 22.7 per cent in 2008. In 2008, the number of occupational diseases amounted to 79 cases, compared with 206 cases in 2002, with a decline in the total number of cases of acute occupational diseases (two cases with three victims in 2008, to one case with one affected in 2002).

Recommendation 12.5:
The Ministry of Health, the State Committee for Nature Protection and the different agencies that have been participating in the development of the NEAP and NEHAP should continue to cooperate closely in the implementation of these plans. They should select priorities on the basis of those identified in these policy documents. An integrated approach should then be developed to environmental health management and effective and participatory procedures to carry out environmental health impact assessments.

According to all agencies mentioned in the recommendation, the coordination works on a personal and official basis. For example, priority actions described in the National Environmental Action Plan and the National Environmental Health Action Plan are implemented through the Programme of Actions on Nature Protection for 2008–2012, which is a cross-cutting programme.

Recommendation 12.6:
The State Committee for Nature Protection and the SES should explore possibilities for sharing their systematic monitoring activities, with a view to optimizing available resources, avoiding duplication and making the information provided more consistent. The State Committee for Nature Protection and the SES should also look at ways of streamlining their respective expertise processes in order to develop a single system of ecological expertise that would integrate environment and health assessments.

Pursuant to the 2002 Cabinet of Ministers Resolution on the Adoption of the Regulations on State Environmental Monitoring, environmental monitoring, including database development, is carried out jointly by the SCNP, the Centre of Hydrometeorological Service, the Ministry of Agriculture and Water Management and other concerned ministries and agencies. An information exchange system has also been developed. The Ministry of Health, as well as other ministries and agencies, is included in the overall network monitoring. For surface water monitoring the country has 1,405 permanent stations. In Bukhara, Navoi, Samarkand and Jizzakh, the centres of sanitary–epidemiological surveillance carry out regular monitoring of water quality of the Zarafshan River and its tributaries. In cooperation with the SCNP, measurements are also taken to detect illegal discharges of pollutants into surface water rivers close to economic entities, especially those located on the Zarafshan River and its tributaries.

Recommendation 12.7:
The Ministry of Health and the Committee for Nature Protection should revise existing standards and develop new ones taking into account the principles of health risk assessment and toxicological criteria, including exposure pathways, and the vulnerabilities of special population groups. The WHO guidelines provide an example of this approach.

The implementation of the Environmental Health Project (World Health Organization/Europe), financed by the European Commission, started in 2009. Among the activities described in the project, an assessment of the effects of environmental factors on public health will be carried out.

Recommendation 12.8:
The Ministry of Health should increase the resources available to the Ecology and Public Health Information System Division for the assessment and investigation of health effects and the development of a communication structure for feedback to the reporting regions and districts.

An information system on environment and health conditions is included in the structure of the state sanitary and epidemiological supervision centres of the Ministry of Health. Reports from the regions and districts are sent through different means, such as couriers and e-mail.

Recommendation 12.9:
The Ministry of Health should increase local capacity in environmental health research by doing its utmost to make it part of international and national research projects. Local awareness about existing funding mechanisms and opportunities to develop research proposals for submission to interested donors should also be increased, the results from local research should be more widely published in the international peer-reviewed literature and local experts should be more involved in the definition of study designs, and in the critical evaluation and discussion of the results.

In 2001, the country had 138 hygiene laboratories, including 23 accredited laboratories. By 2009, the number of laboratories had increased to 175. The number of accredited hygiene laboratories complying with the international standard ISO 17025:2007 has increased by two (43). In 2009, the country had 175 sanitary–hygiene laboratories at all levels, including 45 inter-sanitary laboratories.

The Sanitation and Hygiene Research Institute prepared and distributed the following standards: Hygiene requirements for production and quality perfumes and cosmetic products (SanPiN No. 0186-05); Limit-permissible concentrations and estimated allowable concentrations of exogenous harmful substances in soil (SanPiN No. 0191-05); Hygiene requirements for clothing for children and adolescents (SanPiN No. 0235-07); Hygiene requirements for children's shoes (SanPiN No. 0237-07); and maximum allowable quantity of chemicals released from materials that come into contact with food (SanPiN No. 0214-06).

Since 2005, a monitoring system near the state unitary enterprise, the Tajik Aluminium Company, in the Surkhandarya region, has been used to determine water fluoride levels in the soil. At the local and regional level, all laboratories acquired new technology allowing them to expand the range of studies of water (drinking and surface water) to heavy metal salts (lead, cadmium, copper, mercury, arsenic). The total number of investigated parameters increased from 21 in 2001 to 26 in 2009. In 2001, 12 indicators (nitrates, lead and zinc, copper and pesticides) were studied compared to 24 in 2009 (analysis method developed for chromium 3 and chromium 6, mercury, arsenic, water-soluble fluorides, a group of pesticides – synthetic pyrethroids). In the Fergana region, new analysis methods for air pollutants (benzene, xylene and toluene) were introduced. In the Navoi region, analysis methods for ammonia, acetone and sulphuric acid were also introduced. The number of investigated pollutants has increased from 28 (2001) to 32 (2008).

In the national hygiene laboratory, the Ministry of Health introduced a method of atomic absorption spectrophotometry determining the levels of mercury, arsenic, iron, lead, copper, zinc and cadmium in water and foods.

The "Health-2" programme includes measures to improve the material and technical base of health and hygiene laboratories at all levels. However, implementation has not yet started. As of the beginning of 2010, and thanks to a Kuwait Islamic Bank project, all laboratories in the country will start to be equipped with modern apparatus, not only for monitoring environmental pollution, but also for monitoring the quality of food products, polymers, and so on.

In Uzbekistan, there are 210 bacteriological laboratories, including 43 accredited under the international standard ISO 17025:2007. One of the main tasks is the biological control and safety of drinking water from surface and ground sources, agricultural soil and food products.

State sanitary supervision and control of radiation safety in Uzbekistan is carried out by 23 accredited radiological laboratories at 1,740 sites, using sources of ionizing radiation.

The draft programme for improving and strengthening the logistical base of all laboratories at all levels for five years is at the consultation stage at the Ministry of Economy.