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NOTE

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Preface

The second Environmental Performance Review (EPR) of Kyrgyzstan 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 26 May to 5 June 2008. The team of international experts taking part included experts from Belarus, Bulgaria, Kazakhstan, Norway and Switzerland as well as from the secretariats of the International Union for Conservation of Nature (IUCN) and the United Nations Economic Commission for Europe (UNECE).

The draft EPR report and its translation into Russian were submitted to Kyrgyzstan for comment and to the Expert Group on Environmental Performance for consideration in December 2008. During its meeting on 26 January 2009, the Expert Group discussed the report in detail with expert representatives of the Government of Kyrgyzstan, 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 seventeenth session of the UNECE Committee on Environmental Policy on 28 January 2009. A high-level delegation from Kyrgyzstan 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 Kyrgyzstan and its experts who worked with the international experts and contributed their knowledge and assistance. UNECE wishes the Government of Kyrgyzstan further success in carrying out the tasks involved in meeting its environmental objectives, including the implementation of the recommendations in this second review.

UNECE would also like to express its deep appreciation to the Governments of Austria, Estonia and Switzerland for their financial contributions; to the Governments of Norway and Switzerland for having delegated their experts for the review; and to IUCN 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 Kyrgyzstan was carried out in 2000. This second review intends to measure the progress made by Kyrgyzstan in managing its environment since the first EPR, and in addressing upcoming environmental challenges.

Overall context

The environmental performance of Kyrgyzstan is affected by long- and short-term economic difficulties...

The problems currently facing the Kyrgyz environmental sector are partly related to the country's current economic difficulties, but also to the prolonged and steep recession that has befallen the country since its independence. By some estimates, Kyrgyzstan has lost as much as 70 per cent of its gross domestic product (GDP).

...which limit the availability of financial resources and undermine political will. This is even more true when it comes to mobilizing and making available resources for environmental protection. The lack of funding, however, is not only due to the limited revenues of the national and regional budgets, but also to the limited political will to link the current legal and policy frameworks for environmental protection to the existing budgetary system and procedures.

Policymaking framework for environmental protection and sustainable development

Significant progress has been made since the first EPR in terms of developing the strategic framework for environmental protection. Since the first review in 2000, Kyrgyzstan has made considerable progress in terms of developing its legal and policymaking frameworks for environmental protection and sustainable development. It has approved a set of key policy documents, most notably the 2007 *Country Development Strategy for 2007-2010*, and the 2007 *Ecological Security Concept for 2007-2020*. The adoption of programme documents that recognize the importance of the environment and identify priorities is a positive step. What is still needed is the translation of these broad frameworks into concrete environmental measures and financing proposals for future budgets.

A number of key environmental protection laws have been promulgated, e.g. on environmental protection, environmental expertise, air protection, fauna and specially protected natural areas, as well as on natural resources. The challenge for the country now is to proceed with their concrete implementation. To be implemented, these laws need to be reinforced by more detailed regulations.

At the same time, many institutional changes have occurred since the first review. Most notably, the status of the national environmental authority has been downgraded from a ministry to a State agency, the State Agency of Environmental Protection and Forestry (SAEPF). While its competence has been expanded with the addition of the functions of forest protection and management as well as biodiversity conservation, no additional resources have been allocated to fulfill these new tasks. At the local level, a governance system is currently under formation, but the current sharing of competencies between national environmental authorities and local bodies remains unclear.

The downgrading of environmental authorities has important implications because performing key functions often requires the appropriate status to initiate and facilitate inter-ministerial and intersectoral cooperation. As a result, it is often not possible for SAEPF to properly carry out its responsibilities with regard to environmental protection or the promotion of sustainable development. In these circumstances, the establishment of effective integration and cooperation mechanisms becomes even more important.

Providing sufficient State funding for environmental protection measures remains a key challenge for Kyrgyzstan. Important environmental protection and sustainable development programmes and plans, e.g. the 1995 *National Environmental Action Plan*, the 1998 *Strategy on Sustainable Human Development*, the 2002 *Strategy for Biodiversity Conservation* and the related *Action Plan*, and the 2002 *Agenda 21* have to a great extent not been implemented because their financing has not been secured.

Compliance and enforcement mechanisms

The enforcement of the environmental legislation is hampered by the lowly political status of the national environmental authority. In addition, because of the establishment of interregional environmental protection administrations (April 2008) and the very recent institutional restructuring at the regional level (May 2008), the distribution of competencies is quite unclear and the efficient implementation of environmental control quite inefficient. Furthermore, environmental control authorities at the regional level remain both understaffed and overloaded.

Functions of permitting and control are concentrated under the same department within SAEPF. This is not in accordance with the internationally recognized good practice of splitting these two functions. Such practices, when put in place, make better use of expertise in the respective functional areas and minimize chances for corruption. Once these functions are split, a regular exchange of information between the two respective staffs needs to be ensured. Likewise, and with the same downsides, these functions are not separated at the regional level.

Monitoring and enforcing compliance with permitting remains difficult. This is partly due to the large number of regulated substances based on maximum allowable concentrations (MACs), uniform permitting rules for all polluters irrespective of their size and impact, and the brevity of permits' validity. This system puts a heavy burden on both the environmental administration and the regulated community.

The effectiveness of the compliance monitoring system is weak, partly because the capacities of both inspection staff and laboratories under SAEPF are also weak. Furthermore, one of the major challenges facing the Government and the legislature is to ensure that inspectors are granted adequate access to industrial sites so that the regulated community can be inspected with the appropriate frequency. In severe and emergency cases, when the industrial operator remains reluctant to comply – and in order to discourage similar reluctance from operators in the future – it would be appropriate to give the inspection authorities the legal mandate to implement the required environmental measures at the company's expense.

Environmental self-monitoring and reporting do not exist in practice. Continuous online monitoring in industry is non-existent, and only a few companies monitor their emissions properly. Unless there is a well-documented, legally based reason for keeping such information confidential, new regulations for self-monitoring, self-reporting and handling confidential industrial data need to be introduced that reflect international good practices. Confidentiality should be limited to commercial secrets. Facility-specific information of environmental significance should be publicly available.

Sanctions against environmental violators are not yet efficient enough to modify violators' behaviour and thus to protect the environment effectively. The rates of the fines need to be increased, thereby strengthening their deterrent effect. At the same time, the administration should set feasible and enforceable compliance objectives and implement them in a transparent and accountable manner.

Enforcement authorities at the regional level can hardly cope with the functions delegated to them. They need appropriate assistance (e.g. methodological support, staff training). In addition to providing expert support to local authorities, national-level authorities should exercise stricter quality control of inspection and ensure cross-country uniformity and fairness of regulation. At the moment, there is no organizational structure to promote the internal auditing of inspection and control services and no practical experience with implementing such auditing. This situation may change with the recent adoption of the Government Resolution No 139/2008, which contains detailed provisions on environmental assessment, permitting and control.

Information, public participation and education

Since 2000, Kyrgyzstan has expanded its environment monitoring network, but significant gaps remain. Nonetheless, because of the lack of available resources and the difficult economic situation, the network density is far from the requirements of national monitoring regulations. For instance, a number of pollutants harmful to human health and the environment are not measured; the current networks are unable to link pollution levels with emission patterns, and there is neither an integrated nor interconnected environmental electronic database in the country. As a result, environmental monitoring data is not sufficient for making decisions, elaborating policies or raising public awareness. Moreover, those policy documents with environmental objectives either do not contain any environmental monitoring and information objectives at all or, where set, such objectives remain unattained.

Progress has been made in producing assessments of the state of the environment, but the country is some ways from producing full-fledged assessments based on internationally agreed indicators. Specifically, national state-of-the-environment reports were published regularly up to 2004, but only sporadically since then. An integrated state-of-the-environment assessment report, which marked an improvement from previous largely descriptive report, was completed in late 2008. In the meantime, concise information on the state of the environment has been periodically uploaded on the website of the central environmental authorities. More needs to be done to improve the consistency between the similar environmental data series collected by different public authorities and to ensure that all emission sources report data and that this data is reliable.

SAEPF has improved the level and quality of information to the public. The Agency publishes an environmental newspaper and hosts a dedicated environmental website. Except for SAEPF, however, ministries and agencies with environmental information do not actively disseminate this information to the public. Environmental publications by public authorities have an ad hoc character. As a result, the public is not sufficiently informed about troublesome domestic environmental issues such as poor drinking water quality, uncontrolled litter disposal, forest-cutting, pollution from mine tailings, degradation of pastures and the pollution of Lake Issyk-Kul.

SAEPF has strengthened civil society involvement. The Consultative Council within SAEPF promotes its cooperation with non-governmental organizations (NGOs). NGOs are involved in various governmental environmental processes and activities, including State and public environmental expertise of projects, draft laws, regulations, programmes and concepts, and participation in the Board of the Agency's Environmental Fund. However, owing to the absence of detailed procedures, these efforts have not yet established an adequately transparent and effective framework for efficient public information and participation. Furthermore, the establishment of a legal obligation to inform the public about a given decision and the reasons behind it is still pending. Kyrgyzstan does not have a detailed strategy or an action plan for the implementation of the Aarhus Convention¹.

Environmental education is now taught at all levels, from preschool to university. To move further in this direction, an interdepartmental expert council has been created. In 2003, the Ministry of Education and Science (jointly with the former Ministry of Ecology and Emergencies) adopted the *Concept of Continuous Environmental Education in Kyrgyzstan* as well as the related implementation programme. An interdepartmental Coordinating Council on Education for Sustainable Development, with the participation of key stakeholders, was also been established. However, most of these measures and bodies have not yet been made operational due to continuous reorganization within the governmental institutions concerned.

¹ UNECE *Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters*

International agreements and commitments

Since the first EPR, significant progress has been achieved in terms of international environmental cooperation. Kyrgyzstan has joined seven international conventions and three protocols, and takes part in a number of bilateral and regional agreements. To comply with the requirements under the multilateral environmental agreements (MEAs) in which it participates, Kyrgyzstan, assisted by the international community, has developed policies and strategies and implemented many environmental projects. The *Country Development Strategy and the Ecological Security Concept* lay out the main directions for international cooperation on environment protection.

Clear priorities and objectives regarding MEAs have not yet been adequately defined. As a result, the many ministries and agencies involved in environmental protection do not share a common understanding of problems or of how to effectively coordinate their actions. These two capabilities are needed to ensure that the requisite financing and capacity are available to meet MEA commitments. Furthermore, despite the adoption of the *Country Development Strategy*, international donors lack adequate guidance, which limits the efficiency of international financing and external technical assistance. The preparation of the donors' own Joint Country Support Strategy up to 2010 has not addressed the issue adequately. As a result, donors very often follow their own development strategies.

Regional cooperation to address transboundary problems has improved, but is not yet sufficient... While positive steps have been taken to strengthen bilateral and regional cooperation on the use and protection of transboundary waters, there is much room for further progress. Agreements have been established (mainly prior to 2000) focused on regulating the use of water resources. The agreement between Kazakhstan and Kyrgyzstan *On the Use of Water Management Facilities of Intergovernmental Status on the Rivers Chu and Talas* (2000) includes provisions for the protection of transboundary water resources and was an important step towards a common approach.

...although work on the implementation of UNECE multilateral environmental agreements is progressing. Specifically, preparatory work has begun to ratify the *Protocol on Water and Health* to the *UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention)*. Preparatory work is also under way to join other regional conventions, e.g. the EMEP Protocol² and the *Protocol on Heavy Metals* to the *UNECE Convention on Long-range Transboundary Air Pollution* and the *UNECE Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention)*. Kyrgyzstan has not ratified the *UNECE Water Convention* and is not planning to do so in the near future. However by joining these MEAs, Kyrgyzstan could take advantage, with the assistance of the secretariats of the MEAs and donor countries, of implementation programmes and capacity-building activities.

Economic instruments and expenditures for environmental protection

The State does not devote sufficient regular budget resources to environment protection... This prevents the successful implementation of environmental protection and sustainable development strategies and plans. The lack of budgeted State funding, particularly for projects requiring significant funds, remains a key constraint. Most of the public environmental expenditures are covered by the Environmental Fund. The Fund's revenue base, however, is rather narrow. Furthermore, the criteria by which funds are allocated to projects often remain unclear. More transparency and better communications would increase revenues as well as cost-effectiveness.

² *Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe*

... moreover, it is almost impossible to estimate the funds from the regular budget going to environmental protection. There is no specific budget line for environmental objectives in the regular budget. Changing this situation to ensure that environmental spending is included in overall budget plans and financed by regular sources would create the necessary conditions for a more effective focus on environmental priorities.

Attracting better-targeted donor assistance on environment projects remains an objective. Beyond budgeted resources, attracting assistance and investments serving environmental objectives is of paramount importance for a low-income country such as Kyrgyzstan. Although a better definition of MEA objectives and priorities would significantly improve such linkages, the *Country Development Strategy* provides a national policy framework that can link donor assistance and domestic budget priorities. The inclusion of environmental investments in national programmes to attract donor support is an important factor in the effort to strengthen the financing of environmental objectives.

In Kyrgyzstan, the core economic instrument for financing environmental spending is pollution charges. Nonetheless, there is room for improvement. More efforts are needed to ensure that the system of pollution charges does not target an excessively large number of substances and that it creates incentives for polluters to change their behaviour. Currently, charges are low and collection has been problematic. This fact increases the need to provide a stronger regular base for environmental financing and thus emphasize more the behaviour-changing – and less the revenue-generating – role of this economic instrument.

Sustainable management and protection of water resources

Kyrgyzstan has not been successful in its efforts to develop a consistent national water strategy. The management of water resources is of the utmost importance to Central Asia. In addition to its importance for domestic consumption, water is crucial both for irrigation purposes and for the production of electricity. It is also crucial to the activities of downstream countries, with which Kyrgyzstan has related international obligations. To attain the maximum benefit from this common resource, Kyrgyzstan needs a comprehensive national strategy that sets targets and defines priorities for managing water resources.

The quality of water resources is still under serious threat due to the pressures of past pollution and current economic activities. The tailing dams located at closed uranium mining and processing sites as well as the disposal of radioactive waste from the Soviet era present grave risks to environmental safety and human health in the region, mainly through pollution of surface waters. Groundwaters are also threatened by various anthropogenic activities, including agriculture, industry and transport, and protection rules are not implemented. Kyrgyzstan should take preventive actions and, if not able to afford the costs, seek a substantial part of the funding from international donors.

The establishment of water users' associations has been an important positive step in the structural and institutional reform of the irrigation systems, because it has led to the transfer of responsibility for the operation and maintenance of the in-farm distribution systems to the local level. However, poorly maintained distribution systems and drainage canals make the irrigation of arable land highly ineffective. A fundamental problem is the lack of allocated financial resources for restoration and maintenance of the irrigation distribution infrastructure.

Integrated water resource management is gradually being introduced, even if it is still in the inception phase. However, the proper management of water resources is complicated by the lack of reliable data on their quality and quantity. The responsibility for monitoring water is shared between several ministries, agencies and institutes. Their monitoring activities are not very well coordinated, and for many years they have been hampered by the lack of financial resources. The country has also seen a substantial reduction in its monitoring networks and capacities since the Soviet era. This lack of data makes it impossible to prioritize actions and investment, and complicates the introduction of integrated water resource management principles, an approach promoted in the 2005 *Water Code*. Nevertheless, the establishment of a Chu basin council is a positive development. This will be accomplished under a UNECE-led National Policy Dialogue on integrated water resource management.

Land management and protection

Sustainable land management is one of the Government's main priorities. Land degradation – primarily due to water erosion, desertification, salinization and waterlogging – poses a very serious challenge in Kyrgyzstan. The Government adopted the *National Action Programme to Combat Desertification* (2000) and the *National Framework Programme on Land Management* (2006–2016) within the framework of the Central Asian Countries Initiative for Land Management (2006). These programmes focus on sustainable land management, increased productivity of agricultural land and poverty alleviation in rural areas. Despite the successful implementation of a number of pilot projects focused on sustainable land management and good agricultural practices in the period 2000–2007, very slow change has been coupled with land degradation, a worsening of indicators of agricultural production and an increase in poverty in rural areas. Kyrgyzstan should increase its efforts at full-scale implementation of all the above-mentioned programmes.

Substantial problems have emerged with regard to pasture use and pasture conservation since land privatization took place. Grazing is a traditional agricultural sector in Kyrgyzstan, and pasture land covers 9.2 million ha (nearly 50%) of the country's area. Herding is an important element of the traditional Kyrgyz way of life. Following land privatization, collective farms collapsed and over 530,000 small farms were created. This has rendered the current pasture management system inadequate and in need of reform or substitution. The 2009 *Law on Pastures* is a step in the right direction and needs to move to the implementation phase as soon as possible.

Spatial planning is not used adequately in Kyrgyzstan. Rayon land-use planning schemes have not advanced since 1990. Except in a few cases where projects have started recently, nothing has been seriously implemented. Informal settlements – in particular in the suburbs of large cities and in zones where tourism activities are actively developing – are not contained. There is no planning, which increases the risk of natural disasters in areas where construction should be strictly prohibited. Reviving the use of spatial planning, combined with the introduction of geographic information system (GIS) technologies should be a priority.

Since 1990, there has been no land monitoring in Kyrgyzstan. It is therefore impossible to accurately assess changes, estimate their dynamics in due time, elaborate measures for land prevention and remediation, and provide control of effectiveness of measures undertaken. Making adequate information available to decision makers on soil condition and land degradation processes is vital to ensuring sustainable land management and protection. It is also necessary to initiate background soil and urban soil monitoring. Kyrgyzstan needs to implement the approaches defined under the current regional cooperation in Central Asia and the United Nations Convention to Combat Desertification.

Biodiversity conservation and sustainable management of natural resources

Great attention has been paid to the sustainable management and protection of forests. There is, however, an urgent need for a strategy on biodiversity conservation in general, and on protected areas in particular. In recent years, Kyrgyzstan has managed to elaborate an inclusive and widely accepted forest-related policy and strategic document, the *National Forest Programme*. The country nonetheless lacks a framework policy and strategy on the sustainable use of biological resources. Without such a framework, it may not be possible for other strategies, programmes, or action plans for ecosystems (e.g. forests) or other resources to be effective and/or achievable.

Protected areas have almost doubled since 2000. The size of protected areas in Kyrgyzstan has increased by about 426,000 ha to 937,700 ha, but there is need to move even more State-owned forested lands and hunting areas to a protection regime. Furthermore, there is still room for improvement in the effective management and development of protected areas, through more in-depth and strategic planning. In this spirit, the elaboration of long-term National Strategies and Action Plans for Protected Areas System Development, as recommended by the Convention on Biodiversity, would help Kyrgyzstan both to define

goals and objectives for the development of the protected area system and to prioritize actions for achieving them.

Efforts to protect species are continuing. The national Red List of endangered species was adopted in 2005, as was the related *Red Book* of 2007. But significant opportunity for improvement exists in: (a) defining the de-listing and down-listing criteria and procedures; (b) providing a time frame for their revision and updating; (c) establishing clear legal procedures and rules for selecting species for the Red List; (d) assigning them a threat category; and (e) expanding State responsibilities beyond mere prohibition of direct use (e.g. hunting, collection) of listed species.

The national biodiversity monitoring system needs to be improved. Monitoring activities are carried out in a fragmented manner in some protected areas and hunting management areas. They are performed sporadically and on an ad hoc basis by NGOs and academic institutions. When establishing the national biodiversity monitoring system, it would be highly desirable (both financially and environmentally) to include in it the recently initiated forest inventory.

Conclusions and recommendations

Chapter 1: Policymaking framework for environmental protection and sustainable development

Providing sufficient State funding for environmental protection measures remains a key challenge for Kyrgyzstan. Many policy documents approved by the Government and the President are not financially secured, for instance the *National Environmental Action Plan*, the *Strategy on Sustainable Human Development*, the *Biodiversity Strategy and Action Plan* and *National Agenda 21*. The underlying problem is the existence of a great number of environmental protection and sustainable development programmes and plans for which financing has not been secured, and which are therefore not implemented.

Recommendation 1.1:

The Government should ensure that the approved programmes and plans for environmental protection and sustainable development are financed and directly linked to the system of budgetary financing, monitoring and evaluation of planned and financed activities.

Many existing environmental protection and natural resources laws in Kyrgyzstan, e.g. on environmental protection, air protection, industrial and domestic waste and fauna, are framework acts. To be implemented, they need to be reinforced by more detailed regulations from the Government or the competent ministries, committees and agencies. This is not always the case. For instance, the *Water Code*, adopted on 12 January 2005, has not been implemented and regulations have yet to be approved, while the 1994 *Law on Water* and its related regulations are still in effect. Moreover, implementation of laws by competent ministries, committees and agencies is currently not a well-planned and organized process.

Recommendation 1.2:

To improve the current situation, with effective and timely implementation of national environmental protection and natural resources laws, the Government should:

- (a) *Request ministries, state committees and administrative agencies to combine lawmaking with the planning of effective further implementation of initiated laws, e.g. by preparation in advance of a list of legislation to be adopted or amended, and also of implementation guides defining in particular time frames for implementation;*
- (b) *Establish a general procedure for the drafting and approval, by competent ministries, state committees and administrative agencies, of regulations to newly adopted laws, with timelines practicable and consistent with public participation requirements.*

During the process of past institutional changes, the status of the national environmental authority has been decreased from a ministry to a State agency, despite the fact that its competence has been expanded by the addition of the functions of forest protection and management as well as biodiversity conservation. At the same time, performance of some of its functions, e.g. ensuring environmental safety or promoting sustainable development in various sectors, requires an appropriate status, one that grants broader capability for initiating and facilitating inter-ministerial and intersectoral cooperation. The current status of the national environmental authority seems to be too low for this. For example, the State Agency of Environmental Protection and Forestry is not currently a member of the National Council for Strategic Development, which is responsible for the coordination of activities of various governmental bodies on implementation of the *Country Development Strategy*. In such a situation, it is not possible for the State Agency of Environmental Protection and Forestry to properly carry out its responsibilities on environmental safety or promotion of sustainable development.

Recommendation 1.3:

To enable the national environmental authority to ensure environmental security and promote sustainable development, the Government should:

- (a) *Review the needs and options to raise the status of the State Agency of Environmental Protection and Forestry to that of a ministry; and*
- (b) *Ensure the Agency's active participation in the coordination of intersectoral cooperation on sustainable development at the national level either by initiating its participation in the National Council for Strategic Development or through the establishment of a national council on sustainable development in which it would play a major role.*

The governance system at the regional (oblast) and local levels is currently under formation. The current sharing of competencies on environmental protection between State administrations, interregional departments of the State Agency of Environmental Protection and Forestry and bodies of self-governance remains unclear. In these circumstances, the establishment of effective integration and cooperation mechanisms becomes even more important.

Recommendation 1.4:

To establish effective and practicable mechanisms for cooperation and to clarify environmental protection and sustainable development competencies at the interregional, regional and local levels, the Government should:

- (a) *Initiate consultations between competent central governmental bodies, the regional and local administrations, and local self-governance bodies on this matter;*
- (b) *Develop, on the basis of outcomes of the above consultation, legislative frameworks clarifying responsibilities at every level, and ensure necessary institutional and organizational arrangements for the establishment of regular mechanisms of such cooperation.*

Chapter 2: Compliance and enforcement mechanisms

The low status of the environmental authorities, as a State Agency, weakens the management of the environmental issues at the national level, especially the enforcement of the environmental legislation. In addition, because of the very recent institutional restructuring at the regional level (May 2008) and the establishment of interregional environmental protection administrations (April 2008), the distribution of competencies and the implementation of efficient environmental control is quite unclear (see chapter 1). It seems that the environmental control authorities at the regional level remain both understaffed and overloaded at present.

The current structure of SAEPF includes a relative strong State Environmental Control Division, but functions covering permitting and control (inspections) are still mixed. According to internationally recognized best practices, these functions should be split, even if the regular exchange of information between the staffs charged with the two functions needs to be ensured. Such an exchange of information should be mutually supportive and serve as a basis for improving permitting and enforcement practices. In parallel, the SEE Section is also responsible for issuing some environmental permits. Considering the linkages between EIA and environmental permitting, the SEE Section could take on the tasks of both the future EIA and permitting functions. SAEPF should aim to separate permitting and inspection at the department level, at both the national and regional levels.

Recommendation 2.1:

- (a) *The State Agency of Environmental Protection and Forestry should separate the inspection and permitting functions at both the national and regional levels. An information exchange mechanism needs to be established to ensure feedback between environmental permitting and inspection;*
- (b) *The State Agency of Environmental Protection and Forestry should ensure that the inspection staff at regional level adjusts their skills to the advanced enforcement requirements. For this purpose, the Agency should provide regular training to inspectors, using the support of international projects as well.*

Although the legislative framework with respect to assessment tools has not been revised substantially since the first EPR, Kyrgyzstan has made progress in terms of achieving greater transparency in decision-making. An important step in this direction is the implementation of the *Convention on Environmental Impact Assessment in a Transboundary Context* in connection with some large-scale projects. This experience should be analysed and incorporated in the regulations currently being updated. Public participation in EIA and SEE should be further improved, by providing full public access to documents and inviting the public's comments.

On the other hand, full application of assessment tools (i.e. SEE, EIA and public environmental expertise (PEE)) as required by law is very complicated and will lead to major constraints for developers. The procedural and technical aspects of the three instruments need to be revised and simplified. The general goal of the reform of the EIA system must be to reduce the gap between the SEE system (inherited from the Soviet era) and internationally accepted EIA standards.

Recommendation 2.2:

- (a) *The State Agency of Environmental Protection and Forestry should ensure that the draft amended Instructions on EIA and SEE are in line with best international practices, and should adopt them as soon as possible;*
- (b) *The State Agency of Environmental Protection and Forestry should use the results of the OSCE/UNECE project (EIA in a transboundary context: pilot implementation project in Central Asia) to regulate and implement the three existing environmental assessment instruments (SEE, EIA and PEE) in a more systematic and transparent, but simplified, manner.*

The environmental permitting system is still based on individual permits for different resource uses and single-media impact. There is no differentiation between large and small pollution sources. The large number of regulated substances based on MACs, uniform permitting rules for all polluters irrespective of their size and impact and the short period of validity of permits all make it difficult to effectively monitor and enforce compliance with permits. The existing permitting system puts a heavy burden on the environmental administration and the regulated community and hampers public participation. Permitting needs to be streamlined and used as a tool to achieve environmental targets that are well balanced with both economic development objectives and interests of concerned public.

These kinds of difficulties could be solved with the introduction of an integrated permitting system based on BAT and limited to industrial installations with significant negative impact on human health and the environment. Initial steps have been taken under the 2004–2006 Finnish technical assistance project, Environmental Monitoring and Management Capacity-Building. The project's positive results need to be followed up and taken further. SAEPF should play a leading role in developing the necessary conditions for issuing the IPPC permits. It should work closely with the Ministry of Agriculture, Water Management and Processing Industry, the Ministry of Health and the Ministry of Industry, Energy and Fuel Resources.

Moreover, integrated permits would allow for public participation in environmental permitting. For instance, in the EU Member States there is mandatory public access to the application materials for the integrated permit; in some, it is required that public access be made possible during the drafting of the integrated permit.

Recommendation 2.3:

The State Agency of Environmental Protection and Forestry should:

- (a) *Differentiate the permitting approaches and procedures used for large industry and small and medium-sized enterprises (SMEs), with a view to simplifying the permitting procedure for SMEs with no significant environmental impact;*
- (b) *In parallel, differentiate the responsibilities of the regulating institutions so that major industry falls under the jurisdiction of the central authority and SMEs fall under the jurisdiction of the interregional administrations;*

- (c) *Prolong the duration of permit validity up to 5 to 10 years and formulate permit conditions more precisely, with a possibility to review them whenever significant changes are introduced in production processes and volumes, or when regulatory requirements are amended;*
- (d) *Introduce gradually the integrated permitting system, based on the concept of BAT.*

The functioning of the compliance monitoring system is undermined by the paucity and weak capacity of both inspection staff and laboratories under SAEPF. Environmental self-monitoring and reporting does not exist in practice, as only a few companies monitor their emissions properly. Continuous online monitoring is absent in the industry. Since good international practices entail open access to self-monitoring data and other environment-related information, unless there is a well-documented, legally based reason for keeping it confidential, new regulations for self-monitoring, self-reporting and handling confidential industrial data need to be introduced. Confidentiality should be limited to commercial secrets. Facility-specific information of environmental significance should be publicly available.

SAEPF needs to improve the system for collecting and managing information about the regulated community. Data that are fragmented at the moment need to be collated. SAEPF needs to review and consolidate the monitoring system in order to exclude overlaps, and share data. For this purpose, internal networks should be put in place and monitoring systems should be integrated and optimized.

Recommendation 2.4:

The State Agency of Environmental Protection and Forestry, in cooperation with concerned sectoral ministries and the State Committee on Statistics and in dialogue with business and industry, should develop an appropriate system of environmental monitoring and reporting by enterprises, using as a basis the UNECE Guidelines for Strengthening Environmental Monitoring and Reporting by Enterprises. Together with this process, current legal requirements for self-monitoring system should be implemented.

Sanctions against environmental violators are not yet efficient enough to modify violators' behaviour towards care for the environment. Sanctions should encourage better and more effective enforcement: a system should be developed in which they are more likely to prompt industrial operators to take appropriate environmental measures. One option would be to increase sanctions when the violation continues over a given period or is repeated. The rates of the fines should be increased to enhance their deterrent effect, while feasible and enforceable compliance objectives should be set and implemented in a transparent and accountable manner. In this process, there is a need to follow the recommended EU *Minimum Criteria for Environmental Inspection* (2001/331/EC).

Appropriate assistance (methodological support, staff training, etc.) should be provided to enforcement authorities working at the regional level to enable them to cope with the functions delegated to them. In addition to providing expert support, national-level authorities should exercise stricter quality control of inspection and ensure cross-country uniformity and fairness of regulation. At the moment, there is no organizational structure to promote internal audit of inspection and control services and no practical experience with implementing such auditing, a situation that may change with the recent adoption of Government Resolution No 139/2008.

One of the major challenges facing the Government and the legislature is to see that inspectors are granted adequate access to industrial sites so that the regulated community can be inspected with the appropriate frequency. In severe and emergency cases, especially when the industrial operator remains reluctant to comply, it might be appropriate to give the inspection authorities the legal mandate to implement the required environmental measures at the company's expense.

To eliminate possible duplication and unnecessary administrative burden on the regulated community responsibilities for inspection of SMEs should be delegated to regional administrations. Staff at the national level could carry out inspections of large polluters, or support regional administrations in carrying out such inspections.

Recommendation 2.5:

To improve the efficiency in the environmental protection enforcement and compliance system:

- (a) *The Government should increase the level of the environmental fines. Another option would be to increase penalties when violations continue over a given period or are repeated.*
- (b) *Enforcement authorities should define sector-specific frequencies of inspection and a methodology to follow to adjust facility-specific frequencies of environmental risk rather than having inspections be fixed once a year for all sites. Inspections without prior notice should also be made possible.*
- (c) *The State Agency of Environmental Protection and Forestry should introduce and conduct internal auditing practices for the services involved in inspection and control.*

Chapter 3: Information, public participation and education

Since 2000, Kyrgyzstan has slightly expanded its monitoring networks. The network density is far from the requirements of national monitoring regulations. Concentrations of a number of pollutants identified by the international community as being most harmful to human health and the environment are not measured. The current networks are unable to link pollution levels with emission patterns. There is neither an integrated nor interconnected environmental electronic database in the country. Kyrgyzstan has not developed much-needed regulations, procedures and guidance to restore and modernize its monitoring networks. The results of environmental monitoring are not sufficiently used for making decisions, elaborating policy or raising public awareness in Kyrgyzstan. The policy documents with environmental objectives adopted by Kyrgyzstan in the 2000s either did not contain any environmental monitoring and information objectives at all or, where set, such objectives remain unattained.

Recommendation 3.1:

The Government should accelerate the review of the situation with regard to environmental monitoring in the country, to develop a strategy with an action plan for necessary modernization and upgrading of the monitoring networks in line with international guidelines and best practices. Such an action plan should establish time frames and specify budgets:

- (a) *To restore soil monitoring and to bolster and expand air- and water-quality monitoring networks linking monitoring objectives with priority environmental problems;*
- (b) *To increase the number of parameters measured, in particular, ground-level ozone, PM_{10} , heavy metals and persistent organic pollutants in ambient air and biological parameters in water;*
- (c) *To switch, step by step, to automatic measurement, and improve data quality control and storage procedures;*
- (d) *To link environmental quality data with emission data by enterprises;*
- (e) *To establish and coordinate an integrated environmental database at the central environmental authority, which is interlinked with environmental databases of the other public authorities operating environmental monitoring programmes.*

Kyrgyzstan has harmonized the national statistical classifications of environmental expenditures and waste with those of Eurostat and OECD. It published environmental statistics compendiums in 2001 and 2008. National state-of-the-environment reports in Kyrgyzstan were published regularly until 2004. No report has been published since that time although concise information on the state of the environment has been periodically uploaded on the website of the central environmental authorities. The State Agency of Environmental Protection and Forestry completed an integrated state-of-the-environment assessment report for publication in late 2008. Although this constitutes progress from previous, largely descriptive reports, Kyrgyzstan is still far from producing genuine assessments based on internationally agreed indicators. There is no consistency between similar environmental data series collected by different public authorities. Not all emission sources report data, and the data that are reported are not reliable.

Recommendation 3.2:

The State Agency of Environmental Protection and Forestry, together with the State Committee on Statistics, should develop proposals for adoption by the Government to strengthen environmental reporting in the

country. These proposals should address legal requirements and operational procedures for regular environmental reporting by the principal polluting enterprises to the environmental and statistical authorities, and for the regular publication of indicator-based environmental assessment reports at the national and territorial levels. UNECE Guidelines for environmental reporting endorsed at the 2007 Belgrade Ministerial Conference "Environment for Europe" should be used as guidance to this end.

To inform the public on environmental matters, SAEPF publishes an environmental newspaper and hosts a dedicated environmental website. Nevertheless, the mechanism of access to environmental information in Kyrgyzstan is not transparent. There is a lack of information on sources of environmental data. Excluding SAEPF, those ministries and agencies that possess environmental information do not actively disseminate this information to the public. Environmental publications by public authorities have an ad hoc character. As a result, members of the public are not sufficiently informed about troublesome environmental issues in Kyrgyzstan such as drinking water quality, litter disposal, forest-cutting, pollution from tailings, degradation of pastures, pollution of Lake Issyk-Kul and environmental impacts from mining.

Recommendation 3.3:

To improve considerably public access to environmental information:

- (a) *The State Agency of Environmental Protection and Forestry should establish operational procedures obliging its structural units to prepare, on a regular basis, environmental information inputs for uploading on the Agency's website, and prepare annual plans for environmental publications to be financed from the Environmental Fund;*
- (b) *The Ministry of Emergencies, the Ministry of Health and the other ministries and agencies that possess environmental information should establish information focal points and develop mechanisms for active dissemination of environmental information to the public.*

SAEPF established a Consultative Council at the Agency to promote cooperation between the Agency and NGOs. An NGO representative was included in the Board of the Environmental Fund at the Agency. The legislation provides for public participation in State and public environmental expertise of projects, draft laws, regulations, programmes and concepts. A number of public hearings were held under the EIA procedure that influenced project revisions on environmental grounds. However, owing to the absence of detailed procedures, draft sectoral strategic and legal documents of relevance to the environment are not submitted for public input. While there are cases of ad hoc public involvement in discussions of certain draft laws, strategies and concepts, these efforts are not systematic and as such do not establish a transparent and clear framework. Time frames are frequently not established for individual stages of public participation in environmental decision-making. No legal obligation has been established to inform the public about a given decision, along with the reasons and considerations on which it is based. Kyrgyzstan does not have a detailed strategy or an action plan for the implementation of the Aarhus Convention.

Recommendation 3.4:

The State Agency of Environmental Protection and Forestry and the Ministry of Justice should complete the adjustment of the national legislation to the requirements of the Aarhus Convention, so as to promote its practical implementation by authorities as well as application by the judicial bodies of the Convention's provisions, especially at the local level. The Agency, in cooperation with other public authorities and NGOs, should prepare a detailed strategy for the implementation of the Aarhus Convention aimed, in particular, at building the capacities of civil servants to promote public access to environmental information and public participation in environmental decision-making.

Kyrgyzstan embedded environmental aspects into educational standards for preschool educational institutions. Some environmental subjects are provided in secondary schools on a voluntary basis. A number of vocational schools in Kyrgyzstan provide training in specific environment-related curricula. Training in the fundamentals of ecology is provided to students in all universities in Kyrgyzstan. The Ministry of Education and Science established an interdepartmental expert council that adopted or prepared for adoption standards on some environmental curricula. The Ministry of Education and Science and the Ministry of Ecology and Emergencies jointly adopted a *Concept of Continuous Environmental Education in Kyrgyzstan*. As both the

Concept and the programme have not been made operational since their adoption, their actual impact on the educational process in the country seems to be negligible. The Government established an interdepartmental Coordinating Council on ESD with the participation of key stakeholders. This Council has never met due to continuous reorganizations within governmental institutions concerned.

Recommendation 3.5:

The Ministry of Education and Science, in cooperation with the State Agency of Environmental Protection and Forestry and other stakeholders, including NGOs and the mass media, should establish, without delay, the composition of the Coordinating Council on ESD to help promote and facilitate the implementation at the national level of the UNECE Strategy for ESD at the earliest appropriate level of schooling as well as in non-formal and informal education.

Chapter 4: International agreements and commitments

Since the first EPR in 2000, Kyrgyzstan has made significant progress in terms of international environmental cooperation. It has expanded participation in MEAs by joining seven international conventions and three protocols, and by taking part in a number of bilateral and regional agreements. To comply with the requirements under the MEAs, Kyrgyzstan, assisted by the international community, has developed policies and strategies and has implemented many environmental projects. The *Country Development Strategy for 2007–2010* and the *Ecological Security Concept* are pivotal instruments that outline the main directions for international cooperation with respect to environment protection. However, these documents do not define clear priorities and objectives regarding those agreements that are of highest importance for the country.

Moreover, an effective implementation of commitments to MEAs has often been hampered by the lack of financial resources and capacities of the major implementing agencies at the national and local levels. Kyrgyzstan has received international financing and technical assistance from abroad, but they have not been used as efficiently as they should be for many reasons. National priorities for foreign funding have not been thoroughly studied and no clear strategy has been defined to guide foreign donors. There are many ministries and agencies involved in environmental protection, with no single common vision of problems and little coordination of their respective actions. And last, despite the donors having set up their own strategy, the Joint Country Support Strategy, to improve the efficiency of their assistance to the country, based on the CDS, too often they follow their own development strategies, which are not always country-needs oriented. Better assessment and prioritization of needed actions by the country would make the assistance by the foreign partners more efficient.

Recommendation 4.1:

To improve the implementation of MEAs and to optimize international assistance, the Government should bolster its participation in coordination efforts of donors and international organizations, local institutions, NGOs and the private sector in order to:

- (a) Identify the priorities and objectives of highest national importance in the international conventions and agreements and their related tasks; make them known to the foreign donors so that they can adjust the Joint Country Support Strategy accordingly;*
- (b) Identify and evaluate resources needed for achieving these objectives from both domestic and external sources;*
- (c) Establish common guidelines for the implementation of projects to ensure their steady implementation, better coordination between national implementing agencies and efficient collaboration with foreign partners.*

Kyrgyzstan has continued activities related to the global and regional environmental agreements it has not yet ratified. At regional level, preparatory work is under way to join the EMEP Protocol and the Protocol on Heavy Metals to the LRTAP Convention. Preparations have been done as well for ratification of the Espoo Convention. However, there are no action plans for ratification, and preparatory work has not been completed in all cases. By joining MEAs, Kyrgyzstan would take advantage of implementation programmes

and development of capacities with the assistance of the secretariats of the MEAs and donor countries. Work has just started for preparing the ratification of the UNECE Water Convention's *Protocol on Water and Health*. Moreover, Kyrgyzstan needs to secure the financing of MEAs implementation.

Recommendation 4.2:

The Government should:

- (a) *Prioritize the MEAs that still need to be ratified and establish action plans for the accession procedure, including the drafting of implementing laws;*
- (b) *In particular, proceed with preparatory work for ratification of the UNECE Convention on Industrial Accidents, the protocols to the LTRAP Convention, in particular the EMEP Protocol and the Protocol on Heavy Metals, and the Protocol on Water and Health;*
- (c) *Ensure that sufficient and stable funding is allocated to the implementation of the international environmental conventions that have been ratified.*

Agreements on the use and protection on transboundary waters were established mainly before 2000 and are focused on regulating the use of water resources. The 2000 agreement between Kazakhstan and Kyrgyzstan *On the Use of Water Management Facilities of Intergovernmental Status on the Rivers Chu and Talas* includes provisions for the protection of transboundary water resources and is an important step towards a common approach on this issue.

Recommendation 4.3:

Recognizing the importance of the sustainable use, sharing and protection of water resources in the region, the Government should:

- (a) *Strengthen its participation in the regional cooperation on the sustainable management of transboundary water resources and in negotiations of future agreements on shared water use;*
- (b) *Establish a national strategy for joint action with the neighboring States, to ensure the sustainable use and protection of these waters.*

In recent years, the country has in general fulfilled its financial obligations to the MEAs to which it is a Party. However, as of now the State budget does not include a specific budget line for the obligatory contributions to MEAs and the contributions are still paid by the Environmental Fund.

Recommendation 4.4:

The Government should create a separate budget line for obligatory contributions to MEAs.

Chapter 5: Economic instruments and expenditures for environmental protection

Progress has been made since the first EPR. An automatic indexation of rates on emission charges has been introduced. Tariffs have become more cost-reflective and the situation vis-à-vis payment has improved. The system of environmental funds has been streamlined and management overheads have been reduced, thus allowing for an increase in the amount of resources devoted to financing environmental expenditures. The adoption of programmatic documents that recognize the importance of environmental issues and identify priorities is a positive step towards a framework for concrete environmental measures and improving coordination among stakeholders. Despite these improvements, however, there are areas where further changes would be beneficial.

There have not been major initiatives in the reform of economic instruments. The system of pollution charges targets an excessively large number of substances and does not create incentives for polluters to change their behaviour. Charges are low and collection has been problematic. There is the need to provide a stronger base for environmental financing and to distinguish the revenue-raising impact from the behaviour-changing role of economic instruments. Environmental spending relies too much on financing through pollution charges.

For the time being, revenue-earmarking may be necessary to provide a base for environmental protection financing, but it should not prevent reforms that seek improvements in collection and a more effective system of incentives.

Better incentives and higher collection rates would be expected, if the task of checking the basic data on which pollution charges and other payments are calculated remained with the environmental inspectors, while collection of payments was performed by the tax service/tax authorities.

Recommendation 5.1:

The State Agency of Environment Protection and Forestry and Ministry of Finance should:

- (a) Review the system of pollution charges, aiming at its simplification and proposing the necessary legislative changes to the Government for adoption;*
- (b) Assess the appropriate level of rates for selected pollutants, to generate changes of behaviour toward increased environmental care.*

Prices below cost recovery in sectors with an environmental impact encourage waste, prevent the accumulation of resources for investment and discourage the private-sector involvement. Indirect subsidies through utility prices have been substantial, but this form of support is neither equitable (as subsidies also benefit richer households) nor efficient (as they do not provide incentives for better use of resources). The impact of rising tariffs for municipal services depends on the pace of increases, i.e. how long is the transition period to achieve full cost recovery. In any case, some households may be put in a difficult situation, which would require targeted social assistance, a measure already implemented to accompany the increase in electricity tariffs since April 2008. In addition, enforcement of regulations should be strengthened to create conditions conducive for private sector involvement in utility provision.

Recommendation 5.2:

The State Agency of Environment Protection and Forestry, together with the Ministry of Finance, the National Agency on Local Self-Governance Bodies, the Ministry of Industry, Energy and Fuel Resources and the Ministry of Labour and Social Protection should gradually eliminate price distortions in the provision of public services with environmental impact, through a reinforcement of payment discipline and increases of tariffs to reflect full costs. Mechanisms of support should be provided to the most vulnerable sectors of the population.

The system of environmental funds is the main channel for the financing and implementation of public environmental expenditures. However, its revenue base is rather narrow. The basis for spending decisions remains unclear and there are no well-established criteria for the appraisal of projects. More transparency and better communication would increase the efficiency of spending and aid attempts to increase revenues.

Recommendation 5.3:

The State Agency of Environment Protection and Forestry and the Ministry of Finance should align expenditure by environmental funds more closely with well-defined environmental priorities as well as enhance project planning and project-selection criteria, monitoring and assessment mechanisms. Annual reports should be published on the activities of the funds.

Progress needs to be made in ensuring that environmental spending is well recognized in overall budget plans and financed from general resources. This would allow for a better focus on environmental priorities and the associated resource needs. Temporary reliance on off-budget sources, such as pollution charges, should not detract from the need to establish ordinary budget financing for environmental objectives. The *Country Development Strategy 2007–2010* provides a policy framework that will inform donor assistance and link with domestic budget priorities. For a low-income country, the inclusion of environmental investments in national programmes to attract donor support appears as an important factor in the effort to raise finance. In order to put environmental spending on a sound footing, the challenge is to translate the recognition of environmental issues in policy documents into concrete financing proposals in the framework

of the discussions over future budget plans. First, this demands appropriate mechanisms for coordination and adoption of decisions, involving a plurality of government agencies and other stakeholders. Second, the efficiency of environmental spending should be clearly demonstrable, which demands not only proper design but also suitable control over the implementation of programmed measures.

See also Recommendation 1.1 in chapter 1.

Chapter 6: Sustainable management and protection of water resources

The first EPR recommended that Kyrgyzstan develop a consistent national water strategy. An attempt was made in 2002, but was unfortunately unsuccessful.

The management of water resources in Kyrgyzstan is of utmost importance both from an economic, social and political point of view. In addition to its importance for domestic consumption, water is crucial both for irrigation purposes and for production of electricity. It is also crucial to the activities of downstream countries, and Kyrgyzstan has related international obligations. It is therefore essential that authorities at the national, regional and local levels, together with other domestic stakeholders and international organisations (e.g. the United Nations Special Programme for the Economies of Central Asia (SPECAs); see chapter 4), take coordinated action to achieve the maximum benefit out of their common resources. Attaining this, however, is not possible as long as there is no comprehensive national strategy that sets targets and defines priorities for managing water resources.

Recommendation 6.1:

The Government should entrust the National Water Council to develop as soon as possible and implement a comprehensive and coherent national strategy for the integrated management of water resources. The strategy should be elaborated in cooperation with all relevant national, regional and local authorities as well as NGOs. The strategy should focus on the sustainable use of water resources, and should include protection of water quality, water supply, water pollution control, flood protection, use of water for energy purposes and international obligations.

The tailing dams located at closed uranium mining and processing sites are regarded as presenting the highest risks to environmental safety and human health in the region. The disposal of radioactive waste from the Soviet era is also a considerable challenge to the Kyrgyz economic, social and political development and also to neighbouring countries such as Uzbekistan. If immediate action is not taken, it will only be a matter of time before soil erosion, landslides, flooding or earthquakes will destroy one or more of the uranium tailing dams, with the possible consequence of causing a national and regional catastrophe with radioactive waste being released into the air and/or nearby rivers or lakes.

The cost of damages caused by such a catastrophe and of their remediation would be huge, and certainly much higher than the cost of preventive measures. Kyrgyzstan should tackle these preventive actions and, if not able to afford related costs, it should seek a substantial part of the funding from international donors. Moreover, this problem should be worked out with neighbouring countries, which could be affected by such adverse impact. The principles set up in the UNECE conventions dealing with transboundary issues could be useful in providing guidance to tackle this approach.

Recommendation 6.2:

The Government should take immediate actions, together with international donors and affected neighbouring countries, to reduce the threat that high-risk uranium impoundments pose to human health and the environment, including water bodies. In this approach the Government should take into consideration work and experience under UNECE multilateral environmental agreements.

The quality of groundwater resources is threatened by various human activities such as wastewater discharge, agricultural production, the release of chemicals from products and industrial processes, mining and construction activities, and waste disposal. The threat is especially severe if these kinds of activities occur close to the locations where groundwater is abstracted. Many of the areas around groundwater resources have already today status as sanitary protected areas or sanitary protected zones, but their legal status is very weak and seems to set very few or no limitations to the activities within the areas.

Recommendation 6.3:

The Ministry of Agriculture, Water Management and Processing Industry, together with the other ministries involved, should take appropriate actions to protect the groundwater resources from pollution by:

- (a) Stopping illegal activities within the sanitary protected zones by establishing regular inspections and by sanctioning illegal activities;*
- (b) Ensuring delimitation and demarcation of sanitary protection zones;*
- (c) Strengthening the legal basis for sanitary protection zones, with due consideration to preventing drinking water contamination and the need to protect human health.*

Poorly maintained distribution systems and drainage canals make the irrigation of arable land highly ineffective. Large-scale water loss from irrigation systems has caused a rise in the groundwater table, which has led to a considerable reduction of arable land due to either waterlogged areas or because soil and groundwater have become saline. If proper actions are not taken the long-term effects and economic consequences of this situation will be considerable.

The transfer of responsibility for the operation and maintenance of the in-farm distribution systems to the local level by establishing water users' associations has been an important step forward in the structural and institutional reform of the irrigation systems. The fundamental problem is the lack of financial resources for restoration and maintenance of the irrigation distribution infrastructure.

Recommendation 6.4:

The Ministry of Agriculture, Water Management and Processing Industry together with the oblast authorities and water users' associations should give priority to speed up the process of restoring the water irrigation infrastructure by:

- (a) Making an assessment of the status of the irrigation infrastructure and estimating rehabilitation costs;*
- (b) Prioritizing the most needed and most cost-effective actions;*
- (c) Increasing the financial resources in the State budget available for this purpose ;*
- (d) Increasing the charges set by the water users' associations, aiming at full cost recovery of the operational and maintenance costs of irrigation waters as soon as possible;*
- (e) Striving to attract foreign donors and new investments.*

According to the Water Code, water resources management in Kyrgyzstan is to be based on the river basin approach. Basin Water Administrations and Basin Councils have to be established for the principal basins to coordinate activities within the water sector and to develop river basin management plans, rules and procedures for approval by the Government or governmental entities. So far, this part of the *Water Code* has not been implemented.

Municipalities, agriculture, industry and hydropower plants are the main users of water resources in Kyrgyzstan. Their needs for water differ widely in terms of time, quantity and quality, as do their impacts on the environment and human health. To make optimal use of available water resources, the needs and impacts of water uses in municipalities, agriculture, industry and hydropower generation, together with other uses and flood protection, need to be assessed. The *Water Code* is calling for an integrated water resources management plan that has not yet been established.

Integrated water resource management is a complex approach, but it has proven its efficiency all over

the world. Often, international assistance is helpful to countries when they tackle this difficult issue. In Kyrgyzstan, the World Bank has initiated a pilot project under in the Talas basin to establish a basin water administration and a basin council. Under the UNECE-led National Policy Dialogue on integrated water resources management, part of the EU Water Initiative for Eastern Europe, Caucasus and Central Asia (EECCA) countries, arrangements have been made for the establishment of a basin council for the Chu basin. The World Bank and UNECE activities complement each other and will serve as examples for establishing proper institutional frameworks in other river basins in Kyrgyzstan.

Recommendation 6.5:

The Government should, as soon as possible, establish basin water administrations and basin water councils for each principal basin in line with the Water Code. The management of each principal basin should be based on the concept of integrated water resources management, including the involvement of all relevant stakeholders in the decision-making process. Technical assistance from the international community should be sought to make further progress in this matter.

Data describing the status and pressures on water bodies is an essential tool for making decision for a rational management of water resources. The responsibility for monitoring water quality and quantity is shared between several ministries, agencies and institutes. Their monitoring activities are not very well coordinated and they have all been hampered by the lack of financial resources for many years, which has caused a substantial reduction in their monitoring networks and capacities since the Soviet era. At present, the monitoring capacity is clearly insufficient to give reliable data both on water quantity and quality. The lack of reliable data is causing problems with regard to a proper management of water resources, e.g. prioritization of actions and investments, and may complicate the introduction of integrated water management principles.

Recommendation 6.6:

In order to ensure a sustainable management of national water resources and to attract foreign investment funds in water infrastructure, the National Water Council should work towards:

- (a) establishing an effective national water resources monitoring system in line with the provisions in the Water Code;*
- (b) developing a detailed plan for renewing the monitoring networks for water quality and quantity and laboratory capacity, and for increasing the frequency and coverage of samplings.*

See also Recommendation 3.1 in Chapter.

Chapter 7: Land management and protection

Land degradation – primarily due to water erosion, desertification, salinization and waterlogging – poses a very serious challenge in Kyrgyzstan. The Government adopted the 2000 *National Action Programme to Combat Desertification* and the *National Framework Programme on Land Management for 2006–2016* within the framework of the 2006 *Central Asian Countries Initiative for Land Management*. The programmes focus on sustainable land management, increased productivity of agricultural land and poverty alleviation in rural areas. The programmes recognize the basic challenge of making the concept of sustainable land management one of the Government's main priorities, and having it guide its development strategies, policy, institutions and budgetary processes.

It is crucial that Kyrgyzstan fully implement these programmes, which would require financial mechanisms to be strengthened in order to: (a) support programme activities, local communities and authorities; (b) enhance deeper, coordination between all stakeholders (e.g. national and local public authorities, private sector, local communities, NGOs, academia); and (c) improve information exchange and mechanisms to disseminate best practices.

International donors are involved in the implementation of projects in Kyrgyzstan addressing sustainable land management and protection. Despite the successful implementation of a large number of pilot projects

focused on sustainable land management and good agricultural practices in the period 2000–2007, evidence of very slow change and is coupled with land degradation, a decline in agricultural production indicators and an increase in poverty in rural areas. It is therefore crucial to combine national and international sources of funding to ensure adequate implementation of the *National Framework Programme on Land Management for 2006–2016* and wide dissemination of the positive lessons learned. Agricultural extension services (i.e. Rural Advisory Services in Kyrgyzstan) could be an effective tool to disseminate good agricultural practices through better pasture management, integrated pest management, improved cultivation patterns and organic farming.

Recommendation 7.1:

The Government, the Ministry of Agriculture, Water Management and Processing Industry, the State Agency of Environmental Protection and Forestry, the State Agency of Registration of Immovable Property Rights and local authorities should act in concert to implement the 2000 National Action Programme to Combat Desertification and the 2006 National Framework Programme on Land Management, by carrying out specific pilot projects as a first step, making amendments to these programmes, as necessary. Furthermore, they should ensure that pilot steps further concretize into large scale projects or programmes.

Recommendation 7.2:

The Ministry of Agriculture, Water Management and Processing Industry should promote the application of good agricultural practices, including organic farming, and sustainable land and water management. To this end, agricultural extension services should be strengthened. Where farmers cannot afford these services, they should be provided free-of-charge.

Grazing is a traditional agricultural sector in Kyrgyzstan, and pasture land covers 9.2 million ha (nearly 50 per cent) of the country's area; herding is an important element of the traditional way of life of the Kyrgyz people. Following land privatization, the collapse of collective farms and the emergence of over 530,000 small farms, substantial problems have emerged with regard to pasture use and conservation. The current three-tier pasture management system is ineffective, prone to abuses (corruption) and lacks transparency. The measures undertaken by the central and local authorities to address the situation are insufficient.

Therefore, it is very important to transfer traditional knowledge and practices in cattle breeding to farmers, many of whom possess neither the educational background in agriculture nor relevant experience. Approaches and methods of traditional system of cattle breeding in mountainous areas have been formed over centuries and are based on the invaluable experience of the harmonious environmentally friendly interaction of a human being and the nature. This experience needs to be summarized and widely disseminated among new farmers, who lost or do not get skills in traditional cattle breeding.

Recommendation 7.3:

The appropriate ministries and agencies involved in environmental protection should elaborate and submit to the Government for approval a State programme to promote traditional cattle-raising practices as well as modern, scientifically grounded and environmental friendly animal husbandry technologies, community-based pasture management and pasture conservation and restoration.

Spatial planning is an important tool for sustainable development in any country. It is not used adequately in Kyrgyzstan. Rayon land-use planning schemes, a basis for improved spatial planning, have not advanced since 1990; except in a few cases where projects have started recently, nothing has been seriously implemented. Informal settlements, in particular in the suburbs of the large cities and in zones where tourism activities are actively developing, are not contained. There is no zoning, which exacerbates the risk of natural disasters where human settlement should be strictly prohibited.

It is necessary to strengthen and create legislative frameworks related to land planning schemes and to develop supporting implementation and financing mechanisms. In the context of private landownership,

robust and uncontrollable urbanization through the legal and often illegal transformation of agricultural land into residential areas and escalating land degradation, integrated spatial environmental protection schemes for problem areas of Kyrgyzstan become highly relevant, and even critical, for the country.

Finally, reviving rayon level of spatial planning with the use of modern geographic information system (GIS) technologies should be viewed as a priority task.

Recommendation 7.4:

The Government, the State Agency of Registration of Immovable Property Rights and the State Agency on Architecture and Construction should develop a national framework on spatial planning, including a law, a strategy, an action plan, and corresponding budgets. Responsibilities of national, regional and local authorities vis-à-vis spatial planning should be clearly defined, and adequate resources allocated. As a first immediate step, the national land inventory should be made available.

Availability of adequate information on soil condition and land degradation processes is vital for decision makers to ensure sustainable land management and protection. This would allow for accurately assessing changes, estimating their dynamics in due time, elaborating measures on their prevention and remediation, and providing control of effectiveness of measures undertaken. It is also necessary to initiate background soil and urban settlement soil monitoring.

Unfortunately, no land monitoring has been undertaken since 1990. The adoption of the *Regulations on the Monitoring of the Agricultural Lands* and the *Agricultural Land Monitoring Programme for 1999–2005 and Beyond* in 1999 have not improved the situation due to lack of financial support for the planned activities, which therefore have not been implemented. Work should urgently resume to ensure proper land monitoring.

Recommendation 7.5:

The State Agency of Registration of Immovable Property Rights, the Ministry of Agriculture, Water Management and Processing Industry and the State Agency of Environmental Protection and Forestry should take the necessary measures to establish and develop land monitoring that corresponds to national priorities and needs and meets criteria and approaches defined for regional cooperation under the Central Asian Countries Initiative for Land Management and the 10-year Strategic Plan and Framework to Enhance the Implementation of the United Nations Convention to Combat Desertification.

Chapter 8: Biodiversity conservation and sustainable management of natural resources

The current institutional framework related to biodiversity conservation and biological resources management requires significant improvements. For historical reasons, many undersized units at the national level are involved in natural resources protection and biodiversity conservation, but they act separately. Tasks and responsibilities are imperfectly distributed among different government bodies, often leading to overlapping, duplications and gaps. Moreover, they are different subordinated bodies at the regional and local levels. Restructuring the distribution of tasks at all levels would increase the overall functional capacity of management bodies.

For instance, the Section for Biodiversity, Protected areas, Eco-education and Media of SAEPF requires institutional strengthening and capacity-building. With its current staff, this Section cannot fulfill its role, especially considering that in addition to protected areas, it is responsible for biodiversity conservation in general. An institutional reform is needed to more effectively manage protected areas and biodiversity, including natural resources. Within SAEPF, this could be a “Biodiversity Department” and in the event that the status of SAEPF is upgraded to that of a ministry, this might be the “State Agency for Biodiversity Management” within the Ministry of Environment.

In addition, taking into account the low commercial value and high protection function of Kyrgyzstan forests, in parallel to institutional reforms, more forested lands should be put under protection regime (although different protection categories may apply). Exceptions can be made for those forest areas that have nationally strategic value and importance for other economic sectors (e.g. mining). In this case, a compromise could be to transfer ownership for such areas to relevant government bodies.

Similarly, the transfer to protected areas of those hunting management areas that still remain under State ownership need to be seriously considered.

There is a positive trend to enlarge the size of protected areas in Kyrgyzstan, but there are still many concerns in terms of their effective management. The development of protected areas requires more in-depth and strategic planning. The *Convention on Biodiversity* recently adopted the *Programme of Work on Protected Areas* and requested signatory countries to start its implementation. One of the central recommendations in this programme is the elaboration of long-term National Strategies and Action Plans for Protected Areas System Development. This document may define goals and objectives for the development of the protected area system in Kyrgyzstan and prioritize actions for achieving them. Such a document is usually an excellent tool to increase State budget funding for protected areas, attract more international donors and maximize potential revenues from biological resources management within the protected areas. Its elaboration should be a multi-stakeholder process resulting in an itemized and prioritized action plan to be considered for governmental approval. As a result, a new legal framework and regulations for the management of protected areas could be developed.

Recommendation 8.1:

SAEPF should elaborate a national strategy and action plan for biodiversity, including protected areas. It should address in particular:

- *Varied objectives and needs of individual protected areas;*
- *Enlargement and/or establishment of new protected areas;*
- *Subordination aspects at the national, regional and local levels;*
- *Increased internal capacity-building;*
- *Stable financing of protected areas.*

The national *Red List* adopted by the Government in 2005 and the related *Red Book* of 2008 can be considered as a first step towards improving endangered species conservation. But there are several problems associated with the *Red List* and the *Red Book*. The de-listing and down-listing criteria and procedures are not defined, and there is no stated objective to de-list or down-list the species after inclusion in the *Red List*. No time frame is provided after which the list must be revised and updated. There are no clear legal procedures and rules for selecting species for the *Red List* and assigning them a threat category. Finally, the State does not take any responsibility for listed species other than prohibition of direct use (e.g. hunting, collection). It is desirable that the legislation clearly defines the State's responsibilities vis-à-vis listed species, and that the legislation be better enforced. For example, the State should develop recovery plans (or national species action plans) for species, at least highly threatened category, and should be responsible for implementation of these plans.

Recommendation 8.2:

SAEPF should strengthen the legal base for threatened species conservation. De-listing, down-listing and recovery planning for listed species should be addressed by Red List regulations.

The national biodiversity monitoring system does not work properly in Kyrgyzstan. Monitoring activities are carried out in a fragmented manner in some protected areas and hunting management areas. They are performed by NGOs and academic institutions sporadically and on an ad hoc basis (i.e. they are funding- and project-dependent, on international or national donors). A national forest inventory has been initiated only recently. To support decision making process in the fields of biodiversity conservation and biological resources management, it is essential to develop a national biodiversity monitoring scheme that includes:

- A number of biodiversity indicators selected from internationally recommended lists (e.g. the Convention on Biological Diversity, the Ramsar Convention³⁷, EU directives), and adapted for specific use in Kyrgyzstan;
- Data processing and management system (e.g. software with GIS support);
- Institutional structure with defined national coordination and potential partners;
- Public access to data (e.g., updatable website);
- Availability of required funding (e.g. from the State budget, Academy of Sciences, international donors).

When establishing the national biodiversity monitoring system, it would be highly desirable (both financially and environmentally) to include the recently initiated forest inventory in it.

Recommendation 8.3:

SAEPF should elaborate and implement a national biodiversity monitoring scheme with internationally recommended and nationally adopted indicators, data gathering and processing systems and participatory tools.

In recent years, Kyrgyzstan has managed to elaborate forest-related policy and strategic documents, i.e. the *National Forest Programme*. This programme is known for its participatory and cross-sectoral approach, which provided all concerned in its elaboration and implementation with a strong ownership feeling. In elaborating such a framework and strategy on the sustainable use of natural resources, the criteria and indicators of sustainable forest management⁴⁸, as internationally defined, should be taken into account and applied. The principles of sustainable forest management take account of the environmental, social and economic dimensions. Another key ecosystem with much socio-economic and environmental value for Kyrgyzstan, wetlands, has been neglected during long times. However, currently the Agency is working on a draft national strategy and an action plan on wetlands conservation. This is a requirement of the Ramsar Convention, which provides guidelines for developing national wetlands policy and strategy. Furthermore, Kyrgyzstan lacks a framework policy and strategy on the sustainable use of natural resources (biological resources). Without such a framework vision and strategy, programmes, strategies or action plans for individual ecosystems (e.g. forests), or any other individual resources (e.g. fisheries), may not be effective and/or achievable.

Recommendation 8.4:

SAEPF should elaborate integrated national strategy, programme and action plan to ensure sustainable use of biological resources and ecosystem services (wetlands, pastures, forests, hunting and fishing.) Such a programme should build upon and incorporate the National Forest Programme using a similar participatory and cross-sectoral approach. Principles of sustainable forest management should be applied.

³ *Convention on Wetlands of International Importance, especially as Waterfowl Habitat.*

⁴ According to Helsinki Resolution H1 adopted by the Ministerial Conference on the Protection of Forests in Europe (MCPFE), "sustainable management" means the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

Implementation of 1st EPR recommendations

PART I: THE FRAMEWORK FOR ENVIRONMENTAL POLICY AND MANAGEMENT

Chapter 1 Legal instruments, institutional arrangements and environmental information

Recommendation 1.1:

As most principal environmental and natural resources laws are adopted, activities should concentrate on their implementation, starting with the timely development of all required governmental regulations. See also Recommendations 5.1, 5.2, 7.1 and 9.3.

Regarding the development of “all required governmental regulations”, although the recommendation has not been fully implemented, progress has been made. On the downside, despite the adoption of most of the principal environmental laws discussed in the first EPR, the legislative process is still in development. Furthermore, according to the list of legislative acts providing for environmental permitting, monitoring and control, regulation reform is moving ahead slowly. There are still some gaps and inconsistencies in the regulations required for implementation of the most important environmental and natural resources laws. Many regulating documents enacted during the Soviet era remain in effect.

On the other hand, more than 15 new laws were adopted in Kyrgyzstan during the reviewed period, including the 2009 *Environmental Code*, the 2005 *Water Code*, the 2007 *Law on Policy and Regulation on Emission and Absorption of Greenhouse Gases*, the 2006 *Law on the Ozone Layer Protection*, the 2001 *Law on Industrial and Domestic Waste* and the 2001 *Law on Protection and Use of Flora*. A number of draft laws – e.g. on protected areas and biosafety, and the Forest Code – are currently under consideration by various governmental bodies. According to data on the online legislative database “Toktom”, since 2002 many regulations have been developed by the national government, if rarely by regional authorities, to implement the previously adopted environmental and natural resource laws.

However, the Government does not follow a consistent approach to implementing environmental and natural resource laws. According to the Department of Water Management of the Ministry of Agriculture, Water Management and Processing Industry, the *Water Code* is still not being implemented and the required new regulations and necessary amendments to previous legislation have not yet been developed.

Recommendation 1.2:

The legislative and governmental bodies should see to it that priority policies and management measures receive the necessary funding. Capacity-building measures need to be strengthened, both through training staff at all levels of environmental management and through the upgrading of required equipment. Funding of such measures should primarily be sought from national sources (by adapting the structure of the budget to all policy priorities, including environmental priorities). If funding is sought for training, technical assistance and equipment from international sources, Kyrgyzstan needs to be prepared to better respond to the requirements of foreign partners. See also Recommendations 4.1 and 6.4.

Currently, major priority policies and management measures in environmental protection are being integrated into mid-term country development strategies for 2007–2010 and also promoted through the 2007 *Ecological Security Concept* as well as through the *National Forest Programme for 2005–2015*. These provide the framework for requesting financing for such capacity-building measures from the State budget. Some training activities on environmental enforcement, ecological expertise and environmental impact assessment as well as environmental permitting have been financed from the national and regional environmental protection funds. The State Agency of Environmental Protection and Forestry (SAEPF) provides one training session every year on forestry for 35 inspectors and specialists. This is a six-day

training (35–40 hours) and covers topics such as the calculation of environmental fees, sanctions for non-compliance and environmental examinations. Since 2003, about 200 inspectors and specialists have been involved into these training sessions.

However, progress in implementing the recommendations on capacity-building measures of the first EPR has been very limited. Relevant measures were conducted by SAEPF on an irregular basis, and there is no specialized institution in the country to train professionals in environmental protection.

Funding from domestic public sources remains limited, with the bulk of environmental measures being financed from the system of environmental funds. Resources available to these off-budget funds accrue from various earmarked charges, so the system lacks flexibility. Financing from the regular budget is allocated to the operations of environmental authorities. The *Country Development Strategy for 2007–2010* envisages a number of environmental measures and provides an estimation of potential resources, including those that could be reflected in the medium-term budgetary framework. It identifies a large financial gap that needs to be covered by external sources. The Strategy marks significant step forward in policy planning, providing a framework for attracting external resources. However, envisaged budget resources are low and actual medium-term figures are largely indicative.

Recommendation 1.3:

More attention should be paid to ensuring public participation in all aspects of environmental protection, especially by increasing access to policy-making processes at all levels of the legislative, judiciary and executive powers. The Ministry of Environmental Protection should consider strengthening its capacities for developing public awareness and participation. See also Recommendations 5.3 and 5.4.

With the 2001 *Law on Accession to the Convention of the United Nations Economic Commission for Europe (UNECE) on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters*, Kyrgyzstan acceded to the Aarhus Convention. This Law promotes direct implementation of Convention provisions and some other legal acts adopted thereafter by the Parliament (*Zhogorku Kenesh*), strengthening the implementation of the country's obligations under this Convention. These acts include the 2007 Constitution, the 2006 *Law on Access to Information Available at Public Authorities and Institutions of Local Self-government*, the 2007 *Law on the Procedure for Consideration of Citizens' Appeals*, and the 2006 *Presidential Decree on Measures to Expand, Regulate and Implement in Practice Ways of Interaction of Public Authorities, Institutions of Local Self-government and Civil Society*.

SAEPF established a Consultative Council at the Agency. An NGO representative is a board member of the Agency's Environmental Fund. The Parliament, Government, Ministry of Justice and SAEPF upload draft legal acts and regulations on their websites for public comment, but they do not inform the public about how its comments are taken into account in the final texts.

Since 2006, SAEPF has been publishing an environmental newspaper (*Jer Ene*) two to three times a year. SAEPF also implements the *Strategy on the Dissemination of Information on Forestry*. Since 2005, a website dedicated to environmental matters (www.nature.kg) has been hosted by SAEPF, with support from the UNDP office in Bishkek.

Recommendation 1.4:

An early revision and further specification of the procedures followed in environmental impact assessment should be envisaged. Procedures should be streamlined in order to make them less costly and easier to apply. Procedures for public participation should be regulated in the required detail. The training of environmental managers involved in impact assessment should focus on their role in the screening and scoping phases.

The *Environmental Code* contains detailed provisions on the environmental impact assessment (EIA) procedure and on environmental expertise. The *Law on Ecological Expertise* (as amended in 2003), the 1997 *Instruction on EIA* and the 1997 *Instruction on State Environmental Expertise* (SEE) still have to be revised in order to be in line with provisions of the *Environmental Code*.

January 2007 saw the start of the OSCE⁵¹/UNECE project, "EIA in a transboundary context: Pilot implementation project in Central Asia". As a result of this project, the required changes in procedures for public participation are now included in the above-mentioned draft amended instructions on EIA and SEE. The two draft documents are being discussed by the authorities concerned.

Recommendation 1.5:

The enforcement of satisfactory environmental monitoring in all areas that depend on reliable monitoring data should be seen as a precondition for environmental management and should, consequently, receive appropriate funding. See Recommendations 2.5, 3.1 and 7.3.

The main Directorate on Hydrometeorology (Kyrgyzhydromet) of the Ministry of Emergencies, the primary environmental monitoring institution in the country, has slightly expanded its monitoring networks. After a long interruption, since November 2007 the laboratory of SAEPF, the body intended to be responsible for environmental monitoring, has been working again, but only to a very limited extent because of financial constraints.

Chapter 2 Instruments for environmental protection

Recommendation 2.1:

The introduction of higher user charge rates for sewerage, sewage treatment and municipal waste management should be considered. The charge scheme should allow service providers to operate on a cost-recovery basis.

User charges have been increased, but payment discipline is very poor, thus undermining the financial position of service providers. The latter are not able to effectively recover costs from their operations.

Recommendation 2.2:

The existing pollution charge system should be improved with regard to the efficiency of the applied rates, a possible reduction of the charge scheme and in general a more systematic application of the polluter-pays principle.

The system of pollution charges has remained practically unchanged, aiming to cover a large number of pollutants that exceeds those that are effectively monitored. Charges are too low to constitute an effective deterrent for polluters. A new methodological instruction for the calculation of payments was issued in 2004 (Government Order No. 823/2004), introducing quarterly inflation indexation of charges. Payment compliance has significantly improved in recent years, driving an increase in revenues from pollution charges.

Recommendation 2.3:

An increased use of products charges for environmental policy should be evaluated. The introduction of tax differentiation to encourage the use of environmentally friendly products should be analysed.

No product charges exist on environmentally harmful products (e.g. pesticides, batteries or fluorescent light bulbs). Tax differentiation does not reflect environmental concerns. Charges on the use of fuel are levied from oil traders, not added directly to the price of fuel, and cannot be considered as product charges.

⁵¹ Organization for Security and Co-operation in Europe.

Recommendation 2.4:

A coordinated strategy and a national programme encouraging the introduction of less polluting technologies through modern standards and a revised permitting system as well as economic incentives should be formulated with clear objectives and deadlines, with priority given to environmental hot spots. A strategy to promote cleaner, safer and more sustainable technologies should also be developed and adopted. The role of the State Environmental Fund as a source of finance for related expenditures – as well as for environmental investments in general – should be strengthened. See also Recommendations 7.6 and 9.4.

This recommendation has been implemented through the preparation and approval of two strategic documents: the *Country Development Strategy for 2007–2010*, and the *Ecological Security Concept*.

The Strategy outlines the directions and priorities in all sectors of the economy of the country, including provisions for environmental safety. It is supported by the *Country Development Strategy Action Plan* for the same period. To reflect the recent changes at both the global and national levels, the Government approved the *Country Development Strategy for 2009–2011* (Resolution No. 601/2008) and submitted it to the Parliament for its consideration.

The *Ecological Safety Concept* identified environmental hot spots as well as the directions and mechanisms used to ensure ecological security. A national plan with measures aiming at the implementation of the Concept is under preparation. Furthermore, the *Concept* identifies the need for the introduction of less polluting technologies and discusses the use of a wide range of economic incentives to promote better use of natural resources and more environmentally friendly technologies (see section 4.3). This has not yet been translated into more concrete strategies or action plans.

The National Environment Protection and Forestry Development Fund was formed in 2006 (Presidential Decree No. 2006/2006), merging the operations of the former National Environmental Protection Fund and the Forestry Development Fund. The National Fund coexists with four local funds, as of 2008. A rationalization effort has reduced the number of local funds to contain management costs. The amounts allocated to the financing of environmental measures, both in absolute terms and as a share of the total expenditures of the National Fund, sharply increased in the biennium 2006–2007 after years of decline. Some diversification of the revenue base can be observed, particularly in 2007. The National Fund largely relies on revenues from pollution charges (indirectly, through transfers from the local funds) and contributions from the Kumtor gold mine. Together, these two sources account for almost three quarters of total revenues.

Recommendation 2.5:

An integrated information system strategy should be developed, including the financial aspects of its implementation. The strategy should be explicit on the data collection responsibilities, the data flow organization and the dissemination of data to the public. See also Recommendation 1.5.

The “Kyrgyz Republic Environmental Management Capacity Building Project”, which ADB implemented in the country in the early 2000s, has helped equip the central environmental authorities with computers, train civil servants in data management and establish a pilot environmental data management system at the central environmental authority. There has been no evidence of follow-up to the project’s achievements since its completion.

Chapter 3 Risk management of natural disasters**Recommendation 3.1:**

Monitoring of critical objects and the drawing-up of preventive measures for critical objects (such as waste tailings and water reservoirs located in disaster-prone areas) should become a priority activity in the monitoring system. Certain indicators and their safety limits have to be developed for that purpose. There is an urgent need to rehabilitate or relocate radioactive and other hazardous tailings that are located in areas

of high seismic activity, such as Maili-Suu and Ak-Tuz. An inventory of such “critical objects” and “hot spots” should be made. See also Recommendations 1.5 and 5.3.

About 20 sites of potentially large landslides that could cause major disasters in nearby villages in event of unloading have been identified. These sites are being equipped with real-time monitoring and warning systems. Seismic measurement and forecasting equipment, earthquake detectors and a mobile seismic assessment station are being provided to the Ministry of Emergencies under a Global Environment Facility (GEF) project. A comprehensive monitoring system covering climatic, seismic, hydrological, geo-chemical and environmental parameters in Mailuu-Suu is under development within the same project.

A pollution map was prepared in 2007 within the framework of an international project with the Czech Republic.

Recommendation 3.2:

The necessary increase in efficiency in the coordination of institutions dealing with natural disasters should start with the swift implementation of the State Indicative Disaster Reduction Plan. Improved coordination is also required in transboundary collaboration on natural and technological disasters in the framework of the relevant transboundary agreements.

The coordination of governmental institutions dealing with natural disasters is carried out through an interdepartmental commission on emergency prevention and elimination. The Commission has a prominent status – the Prime Minister is the Head of the Commission, the Minister of Emergencies is the Deputy Head.

The Government has signed bilateral and multilateral agreements with neighbouring States regarding mutual warning and cooperation in addressing the consequences of emergencies. A system of reciprocal notification and cooperation of regional departments of the Ministry of Emergencies with the territorial entities of the neighbouring States has been put in place.

The Ministry of Emergencies' *Development Plan for 2007–2010* comprises provisions to develop transboundary cooperation on these issues.

Recommendation 3.3:

The legal instruments for reinforcing buildings to prepare them better for seismic risks should be revised, as should all technical legislative documents applicable to construction. There is also a need for a specific law regulating the response and rehabilitation activities of the different State and non-State organizations in the field of seismic risk.

The *Law on Protecting Population and Territories from Natural and Technogenic Emergencies* was adopted in 2002. Construction norms and rules for seismic construction in Kyrgyzstan were revised (Construction Norms and Rules 2004 “Earthquake-proof Construction”).

Currently, a draft Law on seismic safety and a draft long-term seismic risk reduction programme are in the process of approval. A uniform legislative act on seismic construction is currently being developed.

Recommendation 3.4:

The development of improved rehabilitation practices should concentrate on low-cost measures that can be applied with local skills. Small contractors active in construction and rehabilitation would benefit from training programmes for the development of their skills. The training capacity in the risk management of natural and technological disasters should be strengthened. Training programmes should be developed and implemented for local authorities in disaster-prone communities. Public awareness programmes should be introduced covering both natural and technological hazards. Risk awareness issues should be included in the primary and secondary school curricula.

Within the limited scope of rehabilitation measures, Kyrgyzstan is attempting to make use of the local expertise available. The Ministry of Emergencies organizes training courses for its own staff as well as for other government bodies and local authorities. Some of these seminars and workshops are also open to NGOs and the public. The Ministry of Emergencies prepares publications and issues TV spots in the Russian and Kyrgyz languages to raise public awareness of natural disaster risks. However, these issues are not yet systematically integrated into school curricula.

A capacity-building programme with funding from GEF is being implemented to help the Ministry of Emergencies, administrations at various levels and local communities to better fulfil their duties and functions related to disaster monitoring and management, to create better awareness, and to be better prepared and more responsive in the event of disasters.

A public awareness campaign (“Life Safety in Mailuu-Suu”) was launched in Mailuu-Suu in partnership with the Geopribor scientific engineering centre and the Kyrgyz National Academy of Sciences. The city administration, schools and the local medical college received brochures explaining the dangers of radioactive waste and offering advice on preventive actions.

Recommendation 3.5:

An increase in the effectiveness of the activities to reduce losses from earthquakes requires the replacement of all old stations by modern digital automatic seismic stations with radio-telemetric connections, possibly in new institutional arrangements.

Seismic measurement and forecasting equipment, earthquake detectors and a mobile seismic assessment station are being provided to the Ministry of Emergencies under a GEF project.

Recommendation 3.6:

Risk management should be introduced as an integral part of territorial planning. A procedure for specifying restrictions on the use of land in areas prone to natural hazards should be developed and implemented. A law on State insurance for natural disasters should be finalized and submitted to Parliament. Development in hazardous areas should be discouraged through taxation, pricing and insurance policies.

This recommendation was partly implemented. The Ministry of Emergencies worked on monitoring, forecasting and preparing the response to potential hazardous events within Kyrgyzstan and its territorial entities (down to the *aiyl okmotu* level). As part of that work, there are restrictions on the development and use of land, although the system for enforcing these restrictions and activities requires adjustment. There are no microseismic zoning maps, even for a number of densely populated areas. Due to the general underdevelopment of rayon territorial planning, the system of restrictions on land use does not work effectively enough. The Government approved the *Law on Voluntary Preferential Insurance of Dwellings against Natural Emergencies* in 2008 and submitted it to the Parliament for its consideration. In principle, construction in risk areas is prohibited. Implementation of this policy, however, is weak and is not ensured everywhere.

Chapter 4 International cooperation

Recommendation 4.1:

The Ministry of Environmental Protection should consider developing and publishing guidelines for international cooperation projects, which include safeguards against the unforeseen discontinuation of the national contribution to the projects. Foreign partners should consider insisting on such project arrangements, which increase the long-term benefit of their involvement. See also Recommendation 1.2.

This recommendation has not been implemented yet due to many political and structural changes. Furthermore, SAEPP does not have the necessary capacities to develop such guidelines.

Each international organization has its own rules and establishes a memorandum of understanding (MoU) with the country for each specific project. Usually, these MoUs include references and conditions related to counterparts' stability as well as assurance that the project in which they are cooperating will be ongoing even after its contribution has ceased. Environmental, social and economic impacts of the project should also be included.

Discussions between SAEPF and the Ministry of Foreign Affairs show that common guidelines could be very useful to assuring the sustainability and long-term impact of international cooperation projects, as well as to avoid overlapping and inefficient use of financial resources. Such guidelines could also be helpful in terms of attracting international investment.

Recommendation 4.2:

Taking into consideration the special significance of water resources for the region and their predominantly transboundary character, it is important to have a legal framework for joint action by Kyrgyzstan and its neighbours to ensure the protection and rational use of these waters. The water protection component of such cooperation ought not to be neglected. See also Recommendation 6.1.

Regarding implementation of recommendation 4.2, Kyrgyzstan has made progress: in 2000, the *Agreement on the Use of Water Management Facilities of Intergovernmental Status on the Rivers Chu and Talas from 2000* with Kazakhstan became operational. In 2003, the GEF project, "Water and Environmental Management in the Aral Sea Basin", which includes all the Central Asia countries, was completed. In 2008, the *Agreement between All Central Asian Countries on Cooperation in Joint Management, Use and Protection of Water Resources of Inter-State Sources* was adopted. With UNDP assistance, Kyrgyzstan, Tajikistan and Uzbekistan are planning the regional project for Improved Land and Water Resource Management in the Upper Syr Darya Basin in the Context of Sustainable Development. Nonetheless, efforts are still needed to implement these agreements to ensure the protection and the rational use of transboundary waters. Furthermore, Kyrgyzstan has not yet ratified the *Convention on the Protection and Use of Transboundary Watercourses and International Lakes* and does not foresee ratification in the near future.

Recommendation 4.3:

The Council on Sustainable Development, and the Sustainable Development Commission should, together with the Ministry of Environmental Protection, determine effective mechanisms for coordination between economic and environmental cooperation projects. The main aim of such coordination should be that foreign direct investments should be environmentally friendly, all necessary precautionary measures being recognized in investment projects.

There are no special mechanisms of coordination. Projects linked to foreign direct investment need to observe general environmental legislation and are subject to the existing system of permitting, licensing and environmental assessment.

PART II: MANAGEMENT OF POLLUTION AND OF NATURAL RESOURCES

Chapter 5 Management of radioactive and other wastes

Recommendation 5.1:

Legal, economic and regulatory instruments for the management of industrial and municipal waste including hygienic and technical norms in accordance with international standards should be completed to pave the way for new technologies in waste reduction, recycling and disposal. They should be in line with the polluter-pays principle. Responsibilities for the adequate treatment and disposal of waste need to be clarified. The adoption of the law on industrial and municipal waste should be accelerated. See also Recommendation 1.1.

The *Law on Industrial and Domestic Waste* and its related by-laws regulating the collection, transport and disposal of different types of waste were supported by the 2005 *State Programme on Use of Industrial and Domestic Waste* to further implement legislation.

Management of industrial waste is one of the most actively developed areas of environmental legislation and implementation. Resolution No. 261/2002 defines specific measures on implementation of the requirements of the *Law on Industrial and Domestic Waste*. The State Programme ensures financing of those measures from the State budget, national and regional environmental protection funds and other sources.

Regarding municipal waste, a model statute for collection companies and regulations for tenders for contractors have been developed. There is a UNDP project addressing compliance of municipal waste management with international standards.

The polluter-pays principle has been taken into account when preparing the legislation and is being implemented for industrial waste. For municipal waste, there are no payments as of yet due to legal uncertainties relating to how to identify the polluter and how to properly assign liability.

A major challenge remains the absence of waste processing facilities and the lack of appropriate and sufficient landfills for industrial waste.

Recommendation 5.2:

Radiological protection principles for the safeguard, use or release of contaminated materials, buildings, areas, dumps and tailings from uranium and heavy-metal mining have to be formulated. The Law on the Subsoil should be amended to include regulations on responsibilities for rehabilitation after the closing of mining and ore-processing operations. The adoption of the law on tailings and dumps should be accelerated and should include provisions for environmental audits of old, high-risk tailing sites. See also Recommendation 1.1.

Radiological protection principles have been formulated in legislation and rules on radioactive waste have been implemented since 2000. The Government adopted the *Resolution on Measures to Secure Safety of Tailing Dumps and Uplands with Radioactive and Toxic Wastes* in 2008. The *Law on Tailing Dumps and Uplands* was adopted in 2001, but does not contain provisions for environmental audits. The Government approved the *Law on Subsoil* in 2008 and submitted it to the Parliament for its consideration.

Recommendation 5.3:

An appropriate share of the State budget should be allocated to urgent remedial measures for the dumps and tailings of closed-down mines, and complementary international funding possibilities should be analysed and applied. A system of regular monitoring of radon in air and uranium-238, radium-226 and lead-210 in river water and sediment as well as in foodstuffs in the affected areas should be set up urgently. The public should be kept informed about any monitoring and remedial action. See also Recommendations 1.3 and 3.1.

See comments under Recommendations 3.1 and 3.4.

Domestic resources to address the issue of dangerous wastes have been regularly allocated from the Fund for the Liquidation of Emergency Situations. The Ministry of Emergencies spent 8 million KGS in the period 1999–2007. The estimated cost of rehabilitation measures amounts 1.5 billion KGS. International funding has been attracted to address the situation of uranium tailings and other toxic wastes, including from the Czech Republic, Japan, the World Bank, the Atomic Energy Agency of the Russian Federation and the United States Energy Department.

Recommendation 5.4:

A series of landfills for non-toxic waste and repositories for hazardous waste have to be constructed in

various parts of the country. Construction should follow internationally accepted practices. A public information campaign should be envisaged in cooperation with NGOs to increase awareness of the potential for waste recycling and reuse. Charges for waste collection should cover the total cost of handling and disposal, and fines for violations of environmental laws should be adapted to the cost of remediation. See also Recommendation 1.3.

The number of landfills for non-toxic waste and of repositories for hazardous waste has not been increased and therefore remains insufficient. More than half of existing sites do not satisfy sanitation standards. Uncontrolled dumps are widespread. There is only one landfill site in Bishkek, whose capacity is severely stretched. Only 1 per cent of municipal waste is recycled. There is no waste separation. Charges for waste collection amount to about 30 per cent of costs, in part due to poor payment discipline and little private involvement in waste collection, which is a municipal monopoly. Fines are not directly linked to remediation activities, but go to the general budget.

No information campaign on waste recycling and reuse was launched.

Chapter 6 Water management

Recommendation 6.1:

The development of a consistent national water strategy, in cooperation with all the public administrations and non-governmental sectors concerned, should be seen as an urgent requirement. All concerned ministries and institutions should align their own relevant policies and practices on the national water strategy. The national water strategy should focus on the sustainable use of water resources, and should cover the protection of water quality, water supply, water pollution control and protection against floods, as well as the priority investments in the water sector. The national strategy should integrate the needs of sectoral activities, the needs of the population and the water-sharing arrangements with neighbouring countries. See also Recommendation 4.2.

Despite various attempts to draft a water strategy, this recommendation has never been implemented.

Recommendation 6.2:

A national council or committee should be created to give direction to the implementation (i.e. not necessarily involving supervisory functions like monitoring) of water policies at national level, harmonize the conditions for water supply (irrigation and public supply) and waste-water treatment, and integrate actions at river basin level.

A National Council led by the Prime Minister and including all ministers and governors for the oblasts was established in 2006. However, this Council has so far had no meetings, and its function has been temporarily assigned to the Department of Water Management within the Ministry of Agriculture, Water Management and Processing Industry.

Recommendation 6.3:

Oblasts should be encouraged to develop coordinated water management plans in catchment areas by agreeing on concerted priorities and objectives when they share common water resources. See also Recommendation 10.3.

This recommendation is no longer relevant. The *Water Code* states that the National Water Administration shall establish programmes and schedules for basin management plans for the development, use and protection of water resources within each main basin and shall organize their implementation. So far, the National State Water Administration has not been established, and its functions have been temporarily assigned to the Department of Water Management.

Recommendation 6.4:

The projects included in the upcoming National Environmental Action Plan should be reviewed in order to arrive at a realistic schedule and priority programme. Such a programme for water investments seems to be a precondition for obtaining any foreign financing. See also Recommendation 1.2.

This recommendation was not implemented.

Recommendation 6.5:

The legal status of water users' associations should be clarified in order to make them fully operational and responsible, as they are key players in any water-saving strategy.

This recommendation was fulfilled by the adoption of the *Law on Associations of Water Users* in 2002. Thus far, 452 water users' associations have been established and 50 more are expected to be established by the end of 2008. This means that almost all irrigated areas in Kyrgyzstan will be administered by the associations.

Recommendation 6.6:

Actions to involve people at the local level in day-to-day water management, protection and saving should be developed and extended to the whole country along the lines of UNDP/Capacity 21 and the GEF awareness campaign, starting in the Chu and Issyk-kul oblasts. Ways should be found to ensure that more international funds are spent at the grassroots level closer to those concretely involved in the management, operation and maintenance of the water distribution systems.

A World Bank project on emergency prevention is being implemented by the Ministry of Emergencies. As part of the project, the sanitary epidemiological station in Mailuu-Suu gets the laboratory equipment. Additionally, two automatic water-quality monitoring stations have been installed in Mailuu-Suu. The project includes collection and dissemination of information to ensure better awareness among the local population as well as their involvement in day-to-day water management and protection.

Recommendation 6.7:

Aquifers whose waters are used for human consumption should be monitored regularly and extensively.

Probably only 40 per cent of the funding needed for the monitoring of aquifers is available; this implies that the frequency of monitoring is not satisfactory. No money is available for the modernization of laboratories, and only microbiological pollution is analysed.

The current network operated by the State Agency of Geology and Mineral Resources focuses on sites with a significant environmental impact, as one third of the wells are used for water supply. Groundwater observation sites are primarily intended to assess groundwater levels (water availability) and natural geochemistry. On points where pollution has been earlier detected ("specific network" points), samples are taken from 2 to 12 times a year depending on the pollution level. All samples undergo so-called reduced chemical analysis, which covers 13 to 14 parameters including nitrates, PH and heavy metals. In samples taken from "specific network" points, three to four additional parameters are analysed.

Chapter 7 Air management**Recommendation 7.1:**

Strengthening the legal foundations of air quality management is of prime importance. Special attention should be paid to all matters of enforcement, including managerial and organizational aspects. In particular, communication and coordination between the key partners in air management should be clarified in the interest of an efficient application of the legal instruments. See also Recommendation 1.1.

On 27 March 2000, the Ministry of Environmental Protection adopted the *Rules of Ambient Air Protection*, which were considered to be a key legal instrument for the implementation of the *Law on Air Protection*. The Rules define the legal, administrative and organizational measures to prevent and control emissions of pollutants from point sources as well as from diffuse sources, namely from transport. Among others, these rules provide guidance for enterprises on how to organize their activities to comply with certain provisions of legislation on protection of ambient air, e.g. the Rules require that enterprises have a specialized division or personnel responsible for planning and conducting measures on ambient air protection.

Nevertheless, the statistical data on enforcement of the legislation on ambient air protection and on air emissions per capita for the period 2000–2006⁶² does not show any significant progress made vis-à-vis air quality management in Kyrgyzstan. While the average annual emissions per capita from point sources remained at the same level (e.g. 7.0 kg per capita in 2000 and 2006), during the reviewed period emissions from motor vehicles have been increasing and the prescribed requirements to prevent and control emissions from transport have proved inefficient.

Recent institutional changes in Kyrgyzstan have affected the communication and coordination between institutions involved in air quality management. Kyrgyzhydromet is the key State institution for air-quality monitoring, but it has been a part of the Ministry of Emergencies since 2005, when the latter was split from the national environmental authority (now SAEPF).

Consequently, Recommendation 7.1 of the first EPR has been only partially implemented by the Kyrgyz Government. Certain measures have been taken to implement and enforce the provisions of the *Law on Air Protection*; however, some of them, especially with respect to emissions from motor vehicles, have to be qualified as inefficient.

Recommendation 7.2:

The National Environmental Action Plan should concentrate on the implementation of low-cost management measures in the short term, and the development of new routines for air management in the medium term, when the economy will have recovered.

This recommendation has lost its initial context since the *National Environmental Action Plan*, developed by international organizations, is no longer one of the governmental working documents on environmental protection. Despite the fact that it was adopted in 1996, it is not referenced in the main environmental policy documents (currently the *Country Development Strategy* and the *Ecological Security Concept*).

Recommendation 7.3:

Ambient air quality monitoring needs to be reinforced and upgraded in particular with respect to the representativeness of stations, the coverage of the network, data accuracy and reliability. Alternate methods of air pollution monitoring should be assessed and their use envisaged. See also Recommendation 1.5.

Kyrgyzhydromet monitors air quality at 14 fixed monitoring stations/posts in four cities located in the north of the country: Bishkek (7 stations/posts), Kara-Balta (2), Tokmok (2) and Cholpon-Ata (2) and in one city in the south: Osh (1).

Recommendation 7.4:

An internal audit of the services involved in inspection and control should be organized in order to evaluate the exact needs and to design adequate measures. Fuel quality control should also be covered in this audit.

⁶² See tables 3.3 and 3.13 of the statistical report, "Environmental Protection in the Kyrgyz Republic, 2000–2006".

The functions of environmental control authorities are defined by Government Resolution No. 139/2008, as well as by the management structure of SAEPF, including the interregional environmental protection administrations. According to this document, no organizational structure to promote internal audit of the services involved in inspection and control has been established. There is also no practical experience in implementing such an audit in the period before the approval of this Decree.

Recommendation 7.5:

Traffic reduction should be sought through a better integration of transport policy and traffic management with territorial planning. Economic instruments such as differentiated taxes and duties should be developed.

Territorial or spatial planning is largely disconnected from transport policy and traffic management. Pollution from traffic remains a major urban problem. Tax differentiation, when it exists, is generally not consistent with the target of reducing air emissions from the transport sector. More favourable fiscal conditions apply to diesel as compared to gasoline, the less polluting alternative. There is no discrimination against older cars in the Customs tariffs, although there are plans to tackle this issue. In the absence of reliable Customs values, duties are calculated on the basis of engine power and the age of the vehicle, with higher charges for new vehicles. Annual vehicle taxes also penalize newer cars. In large cities such as Bishkek, the breakdown of the public transport system and its de facto replacement by mini-buses running on diesel has contributed to increased air emissions.

Recommendation 7.6:

The scope of State assistance for the introduction of cleaner technologies should be extended to ambient air quality and air emissions monitoring. Special attention should be given to thermal power units firing coal in the introduction of cleaner technologies. See also Recommendation 2.4.

No information is available on activities in this area.

Recommendation 7.7:

The present hydropower policy should be continued. Power generation alternatives such as wind, solar and geothermal energy should be investigated and their viability assessed on both local and larger scales. Population exposure to air emissions from stationary sources – like power stations – should be reduced in particular in Bishkek and other large human settlements.

The *Law on Renewable Energy Sources* was adopted in 2008. Prospects for the use of renewable energy were assessed in the 2008 *National Energy Programme for 2008–2010*. The *Programme of Development of Small and Medium Energy Industry until 2012* has been drafted and awaits approval by the President.

Chapter 8 Biodiversity and forest management

Recommendation 8.1:

The existing individual objectives and strategies for biodiversity protection together with protection measures for endangered species should be based on an ecosystem approach and integrated into sectoral policies and plans. The adoption of the existing draft “Strategy and Action Plan on Biodiversity Conservation” should be accelerated.

The country adopted an ecosystem approach as a priority in biodiversity conservation (the 2006 *Third National Report on Biodiversity*). Additionally, biodiversity protection is incorporated into sectoral policies and plans, e.g. chapter 5.4 of the *Country Development Strategy for 2007–2010*. This document outlines 11 measures promoting environmental sustainability, including protected areas, biodiversity conservation, restoration of ecosystems and sustainable management of natural resources. The estimated cost of these measures is \$60 million. At the same time, only about \$10 million is envisaged from the State budget and there is a \$50 million financial gap, which is expected to be covered by private investments, donors

and additional budget funding. Biodiversity issues are also incorporated into the *National Action Plan for Development of Forestry for 2006–2010*.

The *National Strategy for Biodiversity Conservation* and the related *Action Plan* were adopted by the Government only in 2002.

Recommendation 8.2:

The loss of habitats and endangered species in all main vegetation zones of Kyrgyzstan should be halted through the establishment of a long-term master plan for the development of protected territories. The protected areas would need to be enlarged and integrated as core zones in sustainably managed regions. They should also be connected through corridors. Provision should be envisaged for successful protection in connection with land privatization.

No long-term master plan has been adopted by the Government for the development of protected territories. At the same time, the GEF-UNEP-WWF project, “Development of the Econet for long-term conservation of biodiversity in the Central Asia Ecoregion”, in consultation with Governments and using GIS technologies, has outlined an ecological network plan for the Central Asian countries. Taking this plan into account, Kyrgyzstan has established five protected areas since 2000 – three State reserves and two national parks – and has enlarged several other protected areas. As a result, the total size of protected areas has increased by about 400,000 ha. Establishment and operation of the Issyk-Kul Biosphere Reserve can be considered a pilot project in terms of integration of protected areas into sustainably managed regions. In addition, a new Law on protected areas is currently being drafted that specifies needs and functions of different categories of protected areas.

There are no clear provisions envisaged by Kyrgyzstan for successful biodiversity protection in relation to land privatization. This is particularly vital for pastures, forests and so-called hunting reserves (State-managed hunting areas). There are national policies to privatize these areas, but biodiversity conservation needs are not clearly considered in this process.

Recommendation 8.3:

The Ministry of Environmental Protection should actively coordinate its work with the State Agency for Forestry as well as with the Ministry of Agriculture and Water Resources to draw up regulations for effective use of pasture land. Despite the heavy pressure from grazing animals, more efforts should be made to afforest sensitive areas outside leskhozoes. To reduce pressure on Kyrgyz forests and wood stands in general, favourable conditions for the introduction of alternative energy resources should be created.

In 2005, SAEPF was established and since then has coordinated activities of these two sectors. The 2008 *Law on Pastures* and the 2002 *Law on Mountainous Areas* were adopted to draw up regulations for the effective use of pasture land.

Afforestation of sensitive areas has become one of the country’s priorities, receiving State funding as well as foreign donor investment. There are numerous ongoing site-based afforestation projects in the country. Few donor-funded projects are trying to introduce alternative energy resources.

Recommendation 8.4:

The Ministry of Environmental Protection should actively support the development of applied research in the field of biodiversity and forest protection and the sustainable use and management of nature. The participation of the local population and non-governmental organizations in planning and implementing protection measures ought to be improved. The Red Data Books should be updated according to internationally accepted criteria. Funds for a biodiversity inventory and biodiversity monitoring could perhaps be obtained from the income from trophy licences, hunting licences and poaching fines.

Due to the lack of funds, applied research is inadequately supported by the Government. Academic institutions have very small budgets and almost no funds to carry out field studies.

Participation of NGOs in planning and implementing protection measures has improved since the first EPR, positioning Kyrgyzstan ahead of other Central Asian countries.

In 2005, a governmental resolution was adopted regarding the Red List of threatened animal and plant species. A new *Red Book* was then published in 2007. Although it could be considered as an improvement, because of the following reasons it is still far from international standards: (a) formally, international criteria and categories are used for listing, but not followed strictly for all species; (b) the regulation does not outline de-listing and down-listing criteria; and (c) there is no obligation of the Government to fund conservation actions for listed species (action planning and its implementation).

There is no national scheme for a biodiversity inventory and monitoring, and consequently no funds are allocated to these activities. There are only fragmented inventory and monitoring projects on biodiversity, e.g. a national forest inventory was initiated in 2008 and a few game species are being monitored.

Recommendation 8.5:

Kyrgyzstan should sign and ratify the Convention on International Trade in Endangered Species (CITES). Experience gained with the special protection unit for the control of poaching of the snow leopard should be evaluated with a view to its extension.

Kyrgyzstan joined the Ramsar Convention in 2002 and ratified CITES in 2007. The unit financed by the Nature and Biodiversity Conservation Union to combat poaching of the endangered snow leopard continues to function, but this example has not been extended for other endangered species.

PART III: SECTORAL INTEGRATION

Chapter 9 Soil conservation and environmental concerns in agriculture

Recommendation 9.1:

The Ministry of Agriculture and Water Resources should take urgent measures for the creation of advisory services for farmers, including for training with regard to the reduction of undesirable environmental consequences of farming.

Within the framework of a joint project of the Kyrgyz Government, the Swiss Agency for Development and Cooperation and the World Bank, supervised by the Ministry of Agriculture, Water Management and Processing Industry, rural advisory services (RAS) have been set up in all regions and districts. RAS provide farmers with training in the key areas of land and animal husbandry, economy and marketing, profit-generating activities and development, taking into account environmental and legal considerations. RAS trainers are trained at the Advisory Training Centre of the Ministry of Agriculture, Water Management and Processing Industry with the help of leading researchers and practitioners. Regional RAS issue monthly newspapers and work closely with media to inform the public about their activity results and advanced farming practices.

Recommendation 9.2:

The Ministry of Environmental Protection should be given more competences in the national soil protection. The necessary cooperation with the Ministry of Agriculture and Water Resources might require the creation of a special administrative unit in the Ministry of Environmental Protection.

This recommendation has not been implemented. Cooperation between the Ministry of Agriculture, Water Management and Processing Industry, Gosregister and the Ministry of Health is limited. Information exchange on soil monitoring is poor, and coordination of inspection activities requires further improvement. The issue of soil protection is not given proper focus by SAEPF. No special administrative unit has been created. Supervisory functions rest with the Department of State Environmental Control, which finds it difficult to exercise these competencies due to its limited staff and the heavy workload engendered by the variety of other functions it performs.

Recommendation 9.3:

The approval of all by-laws and regulations necessary for the full enforcement of the Land Code should be seen as a priority. Equally urgent for the reform of agricultural policies and management is the completion of the relevant land and other privatization processes, including the required registrations. See also Recommendation 1.1.

Over 10 legal acts regulating various aspects of land use and management have been developed and adopted to enforce the *Land Code* (e.g. the 2001 *Law on Administration of Agricultural Land*, the 2001 *Law on Tailing Sites and Slag Heaps*, the 2002 *Law on Mountainous Areas*, the *Regulations on Providing Pastures for Rent and Use* approved by the Government in 2002 and the *Regulations on the Procedure for Selling Agricultural Land Plots* approved by the Government in 2001). However, the task of consolidating legislation regarding land management and protection remains highly relevant.

According to Gosregister data, cropland privatization is complete. Seventy-five per cent of cropland is in private ownership. The Land Cadastre, including the system of registration of rights to real estate, was established and carried out by Gosregister within the framework of the World Bank project, "Restructuring the Land and Real Estate Management System in the Kyrgyz Republic". Registration of real estate property is almost finalized, except for land parcels in rural areas.

Recommendation 9.4:

The further development of the successful foundations of agricultural policies in Kyrgyzstan should be sought through (a) the implementation of the "State Land Programme", (b) the translation of the "Integrated principles of development of Kyrgyzstan's agriculture in the period 2000–2010" into fully costed projects and programmes, (c) the introduction of sustainability principles into the next updating process of the two programmes, and (d) the full reflection of cleaner agricultural production techniques and schemes for the development of agro-tourism. See also Recommendation 2.4.

This recommendation was partly implemented. Until 2005, the *State Land Programme* had sought to make best use of and conserve land resources. Financial constraints and poor coordination resulted in the main goals of the programme not being achieved.

Two key documents have been adopted to develop sectoral agrarian policy, the 2004 *Law on New Foundations and Measures of Land and Agrarian Reform* and the *Agrarian Policy Concept until 2010*, define the tasks and solutions for agricultural sustainable development and land conservation. There is very limited evidence of their successful implementation.

Cleaner agricultural production techniques and agro-tourism development are not receiving any attention.

Of great importance is the Government's 2006 adoption of the *National Framework Programme on Land Management for 2006–2016* within the framework of the *Central Asian Countries Initiative for Land Management*. The former is a comprehensive programme containing specific projects that address the serious challenge of rural development and the needs of sustainable management of land, water and natural resources and of combating land degradation in the country. The programme combines, on an integrative basis, economic and environmental development objectives and poverty reduction tasks, and relies on the broad cooperation of national institutions and donor community.

Recommendation 9.5:

Special measures should be taken to strengthen Kyrgyzstan's capacity to produce bio-organisms for the control of agricultural crop pests and diseases.

In 2003, the National Centre for the Production of Plant Protection Bio-organisms was created on the premises of the Chu Laboratory. Additionally, the Issyk-Kul, Osh and Jalal-Abad Laboratories produce

conventional biological substances for agricultural applications in order to control crop pests and diseases.

Recommendation 9.6:

A programme for the rational use of pastures should be developed, including pasture rotation schemes and the introduction of measures supporting livestock breeding in remote areas.

There are a number of ongoing pilot projects setting up pasture sustainable development systems (e.g. Community-based Rangeland Management in Temir Village (UNDP/CIDA/GM) and Demonstrating Sustainable Mountain Pasture Management in the Susamyr Valley, Kyrgyzstan (UNDP/GEF)). Their results would be used to develop and finalize the State programme of rational pasture use. The programme will then be submitted to the Parliament for adoption. The main approaches to achieving sustainable pasture management are linked to pasture management decentralization on the one hand, and development of cooperation and community-based pasture management on the other.

Chapter 10 Human health and the environment

Recommendation 10.1:

Programmes to improve hygiene and sanitary conditions in villages should be developed and/or implemented, especially in those villages where there is no piped water supply and that use surface water as a source of drinking water. The contamination of surface water by sewage aggravates the problems and should be addressed in special water protection programmes.

Since 2000, the World Bank and the United Kingdom Department for International Development have supported the Rural Water Supply and Sanitation project. The project's main goal is to improve hygiene, sanitation and water supply facilities at the village and family levels in three oblasts in the north of Kyrgyzstan. In the remaining four oblasts, ADB is assisting the Government with similar tasks.

Recommendation 10.2:

National water quality standards should be revised according to WHO Guidelines. The modernization of water treatment and distribution systems with the help of adequate investments into both should be governed by the principle of maximum reduction of health risks from microbiological contamination of drinking water.

National water-quality standards have not been revised according to World Health Organization (WHO) Guidelines. Kyrgyzstan still uses 1,243 quality standards in line with the Russian standards of 1998.

The principle of maximum reduction of health risks from microbiological contamination of drinking water is hardly met with regard to investments in the modernization of water treatment and distribution systems. In addition, the lack of a national water management strategy, fragmented responsibilities in the water sector and insufficient cooperation between different authorities at all levels further affect full application of this principle.

Recommendation 10.3:

A comprehensive programme for the sanitary disposal of sewage, preventing human exposure to pathogens and protecting drinking water sources should be established. It should include the sanitary education of the public and should propose simple, cost-effective measures that can easily be implemented by local communities as they help to mitigate social consequences of rising water prices. Public buildings should be considered as a priority for action and be designated as pilot projects for demonstration. See also Recommendation 6.3.

This recommendation was not implemented.

Recommendation 10.4:

The effective reduction of population exposure to respirable particulate matter must be a leading criterion in actions to reduce air pollution in the cities. The reduction of emissions from large point sources located in urban areas should be considered as the most feasible way first to improve air quality and subsequently to decrease health impacts. National air quality standards should be reviewed according to the revised WHO guidelines. The monitoring of the respirable fraction of particulate matter (PM₁₀) should be introduced.

Measures to solve air pollution-related problems to have been included in environmental plans and programmes. Transport, rather than large-point sources such as thermal power plants, is the major source of air pollution in urban areas. However, pollution from the thermal power plant in Bishkek is worsening, as the plant uses a combination of heavy oil, coal and natural gas rather than natural gas only. There were plans to begin social-hygienic monitoring, with the pilot phase in Bishkek. The responsible institution for this monitoring programme is the Research and Production Institution on Preventive Medicine. However, due to budget constraints the programme has been postponed. Kyrgyzstan considers it difficult to introduce national quality standards according to the reviewed WHO Guidelines and to comply with them. The Ministry of Health adopted revised MACs in 2003 and 2007 using Russian MACs as reference. Monitoring of PM₁₀ has not been introduced; only total PM is monitored.

Recommendation 10.5:

The health impacts of traffic-related air pollution, and the economic benefits related to the reduction of population exposure to this pollution, ought to be included in the transport development strategies. Technical improvements in the vehicle fleet, the use of cleaner fuels, and alternatives to predominant transport by cars must be looked for as the future sustainable solution for transport problems.

There is no information on a transport strategy in Kyrgyzstan. The current structure of road and vehicle taxes is not conducive to improvement of the vehicle fleet and the use of cleaner fuels. The problems with the health impacts of traffic-related air pollution were reflected in the 2007 *National Profile on the State of Children Health and Environment*.

Recommendation 10.6:

The implementation of the national and local action plans should start urgently, aiming at the most cost-effective way of achieving health benefits. General action plans should be supplemented with detailed technical project proposals. Investments in the technical infrastructure by national and local authorities, as well as by energy production, transport and other industries, should be combined with public education and health promotion campaigns.

The *National Environmental Health Action Plan* was developed as an integral part of the *National Environmental Action Plan*. Neither the *Country Development Strategy* nor the *Ecological Security Concept* consider any specific measures on human health in connection with the state of the environment,

Normally, development of the technical infrastructure by national and local authorities – as well as by energy production, transport and other industries – is not combined with public education and health promotion campaigns. Public education is promoted in this aspect through the processes of environmental impact assessment and strategic environmental assessment, and is an integral part of the developers' obligation to provide public access to information so the public can participate effectively in relevant decision-making processes.

Assessing whether this recommendation was really implemented is complicated. First, the *National Environmental Health Action Plan* was implemented only partially and is not currently considered to be a working governmental document. It should also be mentioned that human health issues had lower priority in the agenda of the environmental protection authority while it was a part of the Ministry of Ecology and Emergencies in the period 2001–2005.

Recommendation 10.7:

The assessment of health risks and benefits should be an integral part of all development projects. This will require substantial strengthening of the technical and scientific basis for risk assessment, including exposure and health assessment. Quality assurance systems should be implemented to ensure the validity of the information. International collaboration and the exchange of information should be facilitated.

Exchange of information with international counterparts is taking place. There are regular visits by WHO staff, and the country fills out WHO questionnaires. Research is conducted on health risks related to water quality. Health risks related to persistent organic pollutants have been studied and assessed. However, development projects do not necessarily contain assessment of health risks and benefits as integral parts.

Recommendation 10.8:

The validity and specificity of health data (e.g. the cause of death diagnosis and registration, infant mortality reporting) should be improved, and laboratory capacities should be reviewed to increase the reliability of health status analysis and the assessment of environmental impacts on health.

The Medical Information Centre of the Ministry of Health collects such data. Several specific projects have been implemented, e.g. on the impact of radon in residential buildings in Mayлуу-Suu and on the correlation between infectious diseases and water quality.

The Ministry of Health operates about 50 laboratories located in every rayon and oblast. Oblast laboratories serve as coordinating centres. Capacity of laboratories has much potential for improvement. Under the *National Programme of Health Reform for 2006–2010*, laboratory modernization and accreditation are under way.