UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

# ENVIRONMENTAL PERFORMANCE REVIEWS

# UZBEKISTAN

Third Review
Synopsis

UNITED NATIONS
**Geneva, 2020**

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# *Preface*

This third EPR of Uzbekistan takes stock of progress made by Uzbekistan in the management of its environment since it was reviewed for the second time in 2009–2010 and assesses the implementation of the recommendations made in the second review.

The EPR covers legal and policy frameworks and environmental compliance assurance mechanisms and addresses the topics of greening the economy, environmental monitoring, public participation and education. Furthermore, it addresses issues of specific importance to the country related to air protection, biodiversity and protected areas, as well as water, waste and chemicals management. The EPR also examines the efforts of Uzbekistan to integrate environmental considerations into its policies in the energy, agriculture, transport, industry and health sectors and to make human settlements more environmentally friendly. The Aral Sea disaster and its consequences for the environment and human health come as a cross-cutting issue throughout the review. The review further provides a substantive and policy analysis of the country's climate change adaptation and mitigation measures and its participation in international mechanisms. It includes an assessment of progress towards relevant targets of the 2030 Agenda for Sustainable Development and provides recommendations related to the achievement of Sustainable Development Goals.

This EPR of Uzbekistan began in September 2018 with a preparatory mission to agree on the structure of the report and the schedule for its completion. A team of international experts took part in the review mission from 25 February to 5 March 2019. In September 2019, the draft report was sent to Uzbekistan for comments. In October 2019, it was submitted to the ECE Expert Group on Environmental Performance Reviews for consideration. During its meeting on 31 October–1 November 2019, the Expert Group discussed the draft report with a delegation from Uzbekistan, focusing on the conclusions and recommendations made by the international experts. The recommendations, with suggested amendments from the Expert Group, were then submitted for peer review to the ECE Committee on Environmental Policy at its twenty-fifth session on 13–15 November 2019. A high-level delegation from Uzbekistan participated in the peer review and the Committee adopted the recommendations in this report.

The Committee and the ECE Secretariat are grateful to the Government of Uzbekistan and its experts who worked with the international experts and contributed their knowledge and expertise. ECE would also like to express its deep appreciation to the German Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety and the German Federal Environment Agency for their support by providing funds through the Advisory Assistance Programme, and to Switzerland for its financial support to this review.

Sincere thanks also go to Hungary, Italy, Portugal, the United Nations Environment Programme, the World Health Organization Regional Office for Europe and the Organisation for Economic Co-operation and Development for having provided their experts to this review. Furthermore, ECE is grateful to the United Nations Country Team in Uzbekistan for its support of this review.

ECE also takes this opportunity to thank Austria, Germany, Norway, Portugal, Switzerland and the European Union for their financial support to the EPR Programme in 2018–2019 and expresses its deep appreciation to Estonia, Georgia, Germany, Hungary, Italy, Montenegro, Romania and Switzerland for having provided their experts for the ECE Expert Group on Environmental Performance Reviews, which undertook the expert review of this report.

# *Executive summary*

## Sustainable Development Goals

*In the period 2016–2018, Uzbekistan worked intensively to define the national Sustainable Development Goals on the basis of the global Goals.* This process has greatly contributed to awareness of the Goals and culminated in the adoption of 16 national goals, 125 national targets and 206 national indicators.

*The institutional set-up for coordination of implementation and monitoring of the national Goals is centred around the Coordination Council headed by the Deputy Prime Minister.* The Coordination Council is supported by six expert groups. However, its membership is exclusively governmental and the composition of the expert groups is largely governmental.

*The effort to define national goals and targets has brought the global Goals closer to the realities and concepts used in Uzbekistan.* However, the lack of national equivalents for some global environment-related targets (12.2, 12.3, 15.6, 15.b and several targets under Goal 13) is difficult to explain. Significant changes in the wording of some other targets (12.7 and 15.9) are notable.

*Some national environment-related indicators have a more limited scope than the corresponding ones in the global indicator framework.* Examples include indicators 6.4.1, 7.2.1, 7.b.1, 11.4.1, 12.5.1, 15.4.1 and 15.8.1. A significant drawback is that Uzbekistan did not nationalize the global indicator 3.9.1, on mortality from air pollution, in its internationally accepted wording.

*Challenges in monitoring of the Goals include the non-availability of data and methodologies for the vast majority of national environment-related indicators.* For example, there are no data on indicators 6.6.1, 7.1.2, 8.4.1, 8.4.2, 12.6.1, 15.2.1, 15.7.1 and 15.c.1. Compatibility of national and international methodologies for data collection is another challenge particularly relevant for indicators 7.3.1 and 12.4.2.

*Since 2019, Uzbekistan runs the national Sustainable Development Goals portal.* The portal provides centralized access to information resources on the implementation of national goals and targets. As at May 2019, the portal provides data for about one third of the national indicators.

*The State Committee on Statistics collects a significant amount of gender-related data but no gender and environment statistics are collected.* This is an important area to develop considering the requirements for gender-disaggregated information for monitoring the implementation of the 2030 Agenda for Sustainable Development (2030 Agenda).

*Addressing persistent regional differences is crucial for the achievement by Uzbekistan of the 2030 Agenda.* Within the country, the Aral Sea region, which includes the Republic of Karakalpakstan and Khorezm Oblast, stands out in terms of the multiple impacts on it of the Aral Sea disaster. For example, in 2017, the incidence of antenatal, perinatal and post-neonatal health conditions and complications in the Aral Sea region exceeded the national average by 50 per cent.

*Another crucial aspect for the achievement of the 2030 Agenda is to leave no one behind.* Examples in this respect are the unequal distribution of health-care services throughout the country and the lack of qualified health professionals in remote rural areas, which present important challenges for achieving progress with targets 3.1 and 3.2, on mothers' and children's health. Under current health-care financing, differences in income among population groups result in further health inequalities, calling for urgent actions under target 3.8.

## Legal, policy and institutional framework

*In 2019, Uzbekistan is in the midst of intensive reforms of its policy and legal framework, including in the environmental area.* Achievements include the adoption in 2019 of several long-term policy documents, such as the Concept on Environmental Protection until 2030, Strategy for Transition to Green Economy for the period 2019–2030, Strategy on Municipal Waste Management for the period 2019–2028 and Strategy for the

Conservation of Biological Diversity for the period 2019–2028. Several new draft laws are in the process of preparation and the country is about to embark on drafting an environmental code.

*The ongoing development of the entire national policy and legal framework represents opportunities for mainstreaming environmental protection throughout sectoral policies and legislation.* The integration of environmental requirements into sectoral legislation and policies is more advanced in the energy and agricultural sectors and has started in the transport, housing and infrastructure, industry, health and tourism sectors.

*Uzbekistan does not yet apply the strategic environmental assessment (SEA) tool to evaluate environmental impacts of future sectoral strategic documents.* Awareness of the SEA tool is limited in the country. Introduction of the SEA tool could help Uzbekistan to enhance policy coherence for sustainable development in line with target 17.14 of the 2030 Agenda.

*The 2019 Concept on Environmental Protection until 2030 sets long-term goals and priorities in environmental protection.* Opportunities for further development of the national policy framework on environmental protection include such areas as climate change, low carbon development, environmental compliance and enforcement, forest protection, soil protection and environmental noise. At subnational level, almost no strategic documents on environmental protection have been adopted by local authorities, which represents another area for development.

*The national environmental authority – the State Committee on Ecology and Environmental Protection (SCEEP) – is well respected among governmental authorities.* At the same time, the establishment of new, separate ministries for several major economic sectors during the period 2017–2019 demonstrates the intention of Uzbekistan to rapidly develop its economy. In these circumstances, effective horizontal coordination mechanisms and meaningful public participation become of outmost importance to ensure that environmental protection is not set aside.

### Regulatory and compliance assurance mechanisms

*Uzbekistan is working to improve the state ecological expertise (SEE) and environmental impact assessment (EIA) procedures, with some changes to the legal and regulatory framework already adopted and others under consideration.* As at 2019, the short time limits for conducting SEE do not provide sufficient time to take due account of the outcomes of the EIA. Other areas in need of improvements are screening, scoping, effective public participation and transboundary impact assessment.

*In 2017–2018, new inspection procedures were introduced with a focus on the use of risk analysis in inspection planning and the reduction of administrative burden on businesses.* This has led to a change in the focus of monitoring of environmental compliance, from areas that became restricted for inspections to areas that were not subject to restrictions, at the expense of potentially overlooking significant violations.

*The national enforcement policy aims at reduction of inspection checks by governmental bodies and more active engagement of citizens in compliance monitoring.* However, there are no procedures for citizens' involvement in environmental enforcement. Citizens' environmental concerns focus on smaller projects in the close vicinity of their homes. Information on inspection activities by SCEEP is not publicly available.

*Any citizen can apply for the status of a public environmental inspector.* From 2017, thousands of citizens received training and obtained identity cards as public environmental inspectors. There are no official statistics on inspection and enforcement activities by these inspectors.

*The level of administrative fines is too low to act as a deterrent to violations since the economic benefits from the illegal activity clearly outweigh the size of fines.* One example is illegal trade in species under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which can often be an organized international crime but would only entail a fine of 0.3–1.0 minimum salary for a citizen and 1–3 minimum salaries for an official.

*The 1992 Law on Nature Protection includes provisions on compulsory and voluntary environmental insurance.* In the absence of subsidiary legislation, the mechanism of environmental insurance does not function.

*Numerous companies have declared their commitment to corporate social responsibility (CSR).* However, the low level of public environmental awareness does not incentivize companies to integrate environmental aspects into their CSR policies.

*No national environmental labelling scheme exists as at 2019.* This area is expected to develop following the adoption in 2019 of the Regulation on voluntary eco-labelling of products.

*The Government started promoting environmental management system (EMS) certification, due to the opening market for foreign investments.* A number of companies provide services in Uzbekistan to deliver ISO 14001 certification.

### Greening the economy

*Uzbekistan demonstrates marked improvement in the business climate since the launch of economic reforms.* In the World Bank's Ease of Doing Business rating, the country ranked 76 (out of 190 countries) in 2018, up from ranking 166 in 2011. Well-designed government policies can help catalyse foreign direct investment (FDI) in directions that contribute to promoting environmentally sustainable growth.

*The system of pollution charges has remained largely unchanged since 2010.* The number of air and water pollutants covered by the system remains very large. Since 2019, pollution charge rates are better protected against erosion through inflation. At the same time, pollution charges are mainly designed to generate revenue for the environmental fund and the state budget.

*The abstraction of water from natural sources is subject to payment of a water use tax.* Water used for irrigation in agriculture is not subject to taxation. There are a number of other tax exemptions that weaken incentives for more rationale use of water.

*The Government has liberalized prices of imported higher quality fuels.* Prices of domestically produced motor fuels continue to be regulated and subsidized. Very low tax rates do not provide incentives for fuel savings.

*The Government has made progress on reform of tariffs for utility services (energy, water, waste) by bringing them closer to cost-recovery levels.* Nevertheless, tariffs remain below cost-recovery levels and provide across-the-board benefits to all households, which mainly favour those with higher incomes.

*Progress is observed in reducing fossil fuel subsidies relative to total GDP (from 30 per cent of GDP in 2010 to 10.9 per cent of GDP in 2017).* However, this proportion is still very high. This makes target 12.c of the 2030 Agenda, on the rationalization of fossil fuel subsidies, of crucial importance for the country.

*Uzbekistan applies investment tax credits and reduced import taxes for renewable energy technologies.* Traditional support schemes such as feed-in tariffs and competitive bidding/auctions have not been used so far to support the use of renewable energy sources (RES).

*The 2018 Law on Public Procurement paves the way for greening the public procurement that accounts for about one third of the consolidated state budget expenditures in Uzbekistan.* Capacity-building of officials involved in procurement is key to ensure the effectiveness of the Law and achieve progress with target 12.7 of the 2030 Agenda.

*Environmental protection expenditures (excluding off-budget funds) accounted for 0.06 per cent, on average, of total general government expenditures in the period 2012–2019.* The proportion of environmental protection expenditures relative to GDP was even smaller, at some 0.02 per cent, in the same period. These numbers are extremely low, especially taking into account the environmental challenges faced by the country.

*In 2017, Uzbekistan reformed the system of environmental funds by merging the Republican Fund and 14 regional funds into the Fund for Ecology, Environmental Protection and Waste Management.* However, the operational rules and procedures of the Fund are not fully transparent.

*Uzbekistan started developing the institutional and legal framework for the establishment of public–private*

*partnerships (PPPs), in line with target 17.17 of the 2030 Agenda.* The intention is to use PPPs in areas such as the provision of public utility services and financing of public infrastructure. The major deterrent is the lack of experience in the use of PPPs.

### Environmental monitoring, information and science

*Environmental monitoring activities are conducted according to the five-year programmes of environmental monitoring.* Key areas for development are automation and digitalization of monitoring and the introduction of $PM_{10}$ and $PM_{2.5}$ monitoring. An integrated environmental information system is not available.

*Most analytical laboratories under ministries and agencies involved in environmental monitoring lack accreditation.* Regional laboratories under the Centre of Hydrometeorological Service (Uzhydromet) analyse air pollution samples but lack capacity to analyse water and soil pollution samples.

*Most biodiversity monitoring is conducted in protected areas (PAs), in particular those with legal status and dedicated personnel.* As of 2018, the populations of some rare and threatened Red Book species are also monitored outside PAs. Long-term research on wild species of flora and fauna suffers from the lack of continuity. No modern forest inventory has been carried out since 1987.

*Most environmental reports and bulletins produced by government agencies in charge of environmental monitoring activities are only shared among government agencies and not made publicly available.* Except for two tables, the State Committee on Statistics does not upload to its website the environmental statistics it collects.

*As at 2019, the national report on the state of the environment and use of natural resources has not been produced since 2013.* The last report, covering the period from 2008 to 2011, was largely descriptive and is not available online.

*Uzbekistan has placed innovation at the heart of its economic development strategy.* Nevertheless, domestic research and development (R&D) expenditure corresponded to 0.2 per cent of GDP in 2017 compared with a global average of 1.7 per cent in 2014 and Organisation for Economic Co-operation and Development (OECD) average of 2.37 per cent in 2017, deferring Uzbekistan's progress on target 9.5 of the 2030 Agenda. Financing for scientific research and innovation in support of environmental protection is not defined as a priority.

*The Scientific and Research Institute on Environment and Nature Protection Technologies under SCEEP has extensive experience in developing technologies for wastewater treatment and reduction of industrial emissions.* The Institute was assigned additional responsibilities in 2018 but struggles with the lack of funding for applied research.

### Access to information, public participation and education on the environment

*The majority of information and data on the environment is not made available online.* Printed publications with information on the environment are disseminated primarily among governmental institutions. The public at large is not sufficiently aware of what information on environmental matters is, its right to request it and the procedures to do so.

*Since 2018, the procedures for operation of environmental non-governmental organizations (NGOs) and the oversight of the activities of NGOs have been simplified.* However, hindrances to the activities of environmental NGOs remain, including for receipt of international funding.

*The public at large and NGO representatives are poorly engaged in decision-making on environmental matters.* Mostly, a small circle of NGOs working closely with governmental authorities is invited to participate in consultation processes. Detailed procedures to enable effective public participation in decision-making on environmental matters are lacking.

*Individuals and environmental NGOs have the opportunity to file cases on environmental matters and appeal actions (or inaction) of governmental authorities in the courts.* However, there are no precedents of environmental NGOs or representatives of the public doing so.

*Public servants working in the environmental and other sectors with an impact on the environment lack sufficient expertise and capacity to enable effective provision of information and public participation in decision-making on environmental matters.* The capacity of the judicial system to provide access to justice on environmental matters has not had the opportunity to develop.

*Environmental education is well developed.* Education for Sustainable Development (ESD) is not integrated into the education system. The country adopted the Concept of Education for Sustainable Development in 2011 but it has not prompted actual changes in the education system. Without ESD, achieving many goals and targets of the 2030 Agenda will be challenging for Uzbekistan.

*Neither SCEEP nor the three ministries in charge of education issues have a clear mandate to work on ESD.* The Coordination Council on Education for Sustainable Development, established in 2011, discontinued its activities in 2014. The driving forces for ESD are the universities and environmental NGOs.

### Implementation of international agreements and commitments

*Uzbekistan is undergoing a major transformation in its relationship with the international community.* It is committed to enhanced regional cooperation in Central Asia. The country has changed its position on water–energy issues. Bilateral cooperation on transboundary waters and the environment has greatly intensified in the past few years.

*Since 2017, Uzbekistan has intensified cooperation with donors on environmental and sustainable development issues.* This is manifested in the growing partnerships in terms of both the amount of financing and areas of engagement.

*Uzbekistan has a proven high capacity for implementation and financial management of Global Environmental Facility (GEF) projects.* About US$37.524 million of GEF funding was utilized in the period 2010–2018.

*A framework agreement with the European Bank for Reconstruction and Development (EBRD) was concluded to enable the operation of the Environmental Remediation Account for Central Asia (ERA).* This will allow the remediation of Charkesar and Yangiabad uranium tailings – the most dangerous sites left by the past uranium production.

*In 2018–2019, Uzbekistan became party to the Paris Agreement, the Stockholm Convention on Persistent Organic Pollutants and the Cartagena Protocol on Biosafety.* Nevertheless, the country is not a party to a number of relevant global and regional multilateral environmental agreements (MEAs).

*MEA implementation remains a problem, related to insufficient administrative capacity, significant gaps in critical information and deficiencies in coordination.* There are no effective systemic coordination mechanisms on environment-related issues that are the subject of international, regional or bilateral cooperation. The country has had difficulties fulfilling its reporting obligations under several MEAs.

*The Multi-Partner Human Security Trust Fund for the Aral Sea Region is an emblematic initiative of Uzbekistan.* It aims to streamline the efforts of the Government and the international community to address the consequences of the Aral Sea disaster. Efficient functioning and transparency in the operation of the trust fund are prerequisites for attracting interest from the international community.

*In 2016, the Western Tien-Shan transboundary site (Kazakhstan–Kyrgyzstan–Uzbekistan) was inscribed onto the World Heritage List.* It is the first natural heritage property for Uzbekistan. A trilateral memorandum of cooperation signed by the three countries in 2019 foresees the establishment of a coordinating working group and a monitoring programme for the property.

### Climate change

*The country fulfils its reporting obligations and has submitted three national communications under the United Nations Framework Convention on Climate Change (UNFCCC).* However, the newest data on greenhouse gas (GHG) emissions available in 2019 are from 2012. The process of preparing a GHG inventory is not a regular

activity.

*In the period 1990–2012, there has been a 13.7 per cent increase in overall GHG emissions and a 21.6 per cent decrease in emissions per capita.* In 2012, the energy sector accounted for 82 per cent of GHG emissions. Within the energy sector, most GHG emissions come from fuel combustion.

*The land use change and forestry (LUCF) sector is the greatest contributor to $CO_2$ removals.* In 2012, the sector's contribution to emissions was -2.9 Mt $CO_2$-eq. This translates in net sinks corresponding to 2.7 per cent of the total $CO_2$ emissions, and 1.4 per cent of total GHG emissions. A marked increase in removals from 2008 onwards is due to intensive afforestation in desert areas.

*The 2017 (Intended) Nationally Determined Contribution ((I)NDC) of Uzbekistan stipulates a carbon intensity target, namely, to decrease specific emissions of GHGs per unit of GDP by 10 per cent by 2030, with 2010 values as reference values.* Considering the strong growth of the economy and the projected growth of the population, it is very probable that overall GHG emissions will increase significantly, even if the mitigation target of the (I)NDC is reached.

*Climate change issues have, to a certain extent, been incorporated into sectoral legislation and strategic documents.* Uzbekistan does not have legislation to specifically address climate change and is also lacking an overall strategic document on the issue.

*The energy sector is the focus of most mitigation measures in the country.* Mitigation measures mostly concern improving energy efficiency, including energy efficiency in buildings, and increasing the share of renewable energy in the energy mix.

*The most important measures relevant to climate change in the forestry sector are the massive afforestation campaigns in the dried bed of the Aral Sea.* These forest plantations are essential in mitigating dust storms and can provide economic opportunities to the impoverished communities that once relied on fishing.

*Uzbekistan has been very successful in mobilizing international climate finance sources in the past years.* The country has also had success in hosting Clean Development Mechanism (CDM) projects.

*The 2019 Strategy for Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030 in the Republic of Uzbekistan defined priority areas for disaster risk reduction.* Local disaster risk reduction strategies are lacking.

*Climate change issues have started being integrated into the curricula of secondary school education.* They are not yet integrated into the curricula of primary education, vocational training and higher education. Most awareness-raising activities are implemented in the framework of donor-financed projects.

### Air protection

*Uzbekistan has a comprehensive air monitoring network with 63 fixed posts and measurement of 13 different substances.* Development of monitoring of fine dust ($PM_{10}$ and $PM_{2.5}$) by automatic equipment, along with acquiring technical support for compiling emission inventories, are urgent priorities.

*Compared with World Health Organization (WHO) and European Union (EU) air quality standards, the air quality standards in Uzbekistan are the same for $NO_2$ and ozone, more stringent for CO and less stringent for $SO_2$.* For $PM_{10}$ and $PM_{2.5}$, no air quality standards are defined in Uzbekistan.

*Although $PM_{10}$ and $PM_{2.5}$ data are scarce in Uzbekistan, the probability that WHO Air Quality Guidelines for the mean concentrations of $PM_{10}$ are exceeded in cities is high.* In a few cities, the annual dust concentration exceeded the national standard for dust.

*An important part of the air pollution by dust particles is due to natural causes.* Natural emissions of aerosols to the atmosphere by sandstorms from the Karakum and Kyzylkum Deserts and from dry parts of the Aral Sea, which transport dust from the western to the eastern part of the country, and also transboundary air pollution by

dust, cause high background levels of dust.

*The industrial emissions of $SO_2$, NOx and total suspended particles (TSP) account for 40 per cent, 5 per cent and 38 per cent of the total national emissions respectively.* In industrial cities such as Angren, Almalyk, Fergana and Navoiy, emissions from industry and mining lead to relatively high values on the Air Pollution Index used in Uzbekistan.

*Best available techniques (BATs) to abate air pollutant emissions as described in guidance documents developed under the Convention on Long-Range Transboundary Air Pollution or the EU Industrial Emissions Directive are not applied in Uzbekistan.* Emission reduction plans for air-polluting industrial sectors are not developed.

*In 2016, 19 per cent of the emissions of $SO_2$ and 70 per cent of the emissions of NOx from stationary sources were caused by thermal power plants (TPPs).* The emission limits defined for specific plants in Uzbekistan are generally less stringent in comparison with EU emission standards based on BATs. On a positive note, the modernization of old TPPs has started.

*The agricultural sector is the largest source (99 per cent) of emissions of $NH_3$.* Measures to control ammonia emissions are not yet widely applied.

*Air pollution from the residential sector contributes to bad air quality.* Poor maintenance of district heating installations and the lack of insulation of buildings lead to low energy efficiency. The use of firewood and coal in individual stoves and furnaces with low emission heights is another contributor to poor air quality.

*Uzbekistan progressed with reducing the consumption of ozone-depleting substances (ODS).* In 2017, consumption decreased to 0.87 ozone-depletion-potential (ODP) tons (100 per cent hydrochlorofluorocarbons (HCFCs)), which represents a reduction of 98.8 per cent from baseline (74.7 ODP tons in 1989). A slight increase of consumption to 2.53 ODP tons was observed in 2018.

### Water management

*The majority of surface water bodies are considered to be moderately polluted under the Water Pollution Index used in Uzbekistan.* The most polluted watercourses in 2018 were the Siab collector channel in Samarkand and the Salar channel downstream of the cities of Tashkent and Yangiyul. Groundwater quality is considered generally satisfactory. Average non-compliance of drinking water samples in the period 2012–2017 is in the range of 5–10 per cent per year for microbiological analysis and 10–15 per cent for chemical analysis.

*The current annual demand for water in all sectors of the economy of Uzbekistan is estimated at 64 $km^3$.* Forecasts show that the demand for drinking water supply and in industry and rural areas will increase, while demand in irrigated agriculture, the current share of which is around 89–92 per cent of total water use, will decrease.

*Since 2010, Uzbekistan has made progress in the area of investment in new capital infrastructure to increase access to drinking water and sanitation.* Investments were also made for refurbishment of irrigation infrastructure.

*According to the State Committee on Statistics, access to centralized drinking water supply was 76 per cent nationwide and 63 per cent in rural areas at the end of 2017.* According to the Ministry of Housing and Communal Utilities, only about 63.5 per cent of the population nationwide were covered by centralized drinking water supply services in early 2019. While work is being done to improve access, quality of service remains an issue.

*According to the State Committee on Statistics, at the end of 2017, 35.8 per cent of the housing stock in the country had sanitation services provided, and only 10.8 per cent in rural areas.* According to the Ministry of Housing and Communal Utilities, in early 2019, only about 15.6 per cent of the population were connected to centralized sewerage services.

*In terms of water-use efficiency, Uzbekistan reports US$1.2 per $m^3$ of water for 2015.* This figure is the lowest of all countries that reported against the global Sustainable Development Goals indicator 6.4.1 for 2015.

*The formation of the Ministry of Water Management and the Ministry of Housing and Communal Utilities in 2017–2018 adds focus to the key issues of water resources management and water supply and sanitation.* The need to move towards the principles of integrated water resources management (IWRM) and greater stakeholder involvement remains, along with the opportunities to better coordinate the activities of various actors and harmonize the use of data collected.

*The policy framework does not sufficiently focus on the use of economic instruments and cost recovery with regard to the use of groundwater and surface water.* In addition, linkages between land use planning and water management are not sufficiently present in the current policy framework. The policy framework does not require the development of river basin management plans (RBMPs), even though some progress was achieved in this area.

### Waste and chemicals management

*Uzbekistan is reforming its waste management policies.* In 2017–2018, the responsibilities of SCEEP in waste management were strengthened and respective institutional arrangements were put in place. New institutional arrangements and dedicated efforts allowed the country to increase the coverage of the population by waste services from 22 per cent in 2016 to 53 per cent in 2018.

*The Strategy on Municipal Waste Management for the period 2019–2028 sets well-defined goals until 2029 and should support the achievement of target 12.5 of the Sustainable Development Goals.* However, all data on waste are estimated and incomplete. The 2002 Law on Waste does not respond to the needs of the new system of waste management.

*The number of dumpsites in Uzbekistan is known but details of their operation are not yet collected and summarized.* Cities other than Tashkent dispose of their waste on allocated sites, usually on the city outskirts. Such sites do not include barriers controlling pollution and are regularly set on fire to make space for additional waste. Replacing existing dumpsites by controlled landfills is a priority recognized by the Government.

*Sorting of municipal solid waste (MSW) is not yet formally introduced as a national policy, but the informal sector and private companies are active in recovering recyclables from waste.* The recycling rate was estimated to be 5–10 per cent in 2017 but the actual recycling rate could be higher. The first waste sorting plant was put into operation in 2018.

*Uzbekistan classifies hazardous waste based on four hazard classes that cover 134 types of waste.* This waste classification is not compatible with international practice.

*Requirements on safe handling and treatment of medical waste are in place.* Public hospitals face challenges in complying with the requirements, due to limited funds being allocated in hospital budgets for medical waste management. A specialized service for collection and treatment of medical waste is not available.

*Uzbekistan does not possess the expertise and financial resources to deal with the impacts of waste generated in the past, such as radioactive waste, obsolete pesticides and other persistent organic pollutants (POPs).* The national POPs inventory dates back to 2009. Cooperation with the international community is key to addressing environmental and health risks from these types of waste.

*The National Profile on Management of Chemical Substances was prepared in 2012 and contains data from 2008, 2009 and 2010.* It does not provide enough information on chemicals management to enable policy development.

*Uzbekistan does not have specific legislation on chemical emergency preparedness and response.* Chemical emergencies are included in the general framework of technogenic emergencies. Chemicals management is not included as part of environmental policy.

### Biodiversity and protected areas

*The adoption of the 2019 National Biodiversity Strategy and Action Plan (NBSAP) is a step forward for protection*

*of biodiversity and implementation of the country's international commitments on biodiversity.* However, only a few rare and threatened fauna species, and no flora species, are currently covered by single species conservation plans. No national wetland policy is in place. The development and implementation of policies on biodiversity conservation is seriously hampered by the unavailability of reliable data.

*The populations of widespread wild animal species are either stable or growing in numbers.* However, there are decreasing trends in populations of several globally threatened or locally endemic fauna species. This is the case for the saiga antelope, marbled polecat, Pallas's cat, Saker falcon, sociable lapwing, Egyptian vulture and many others.

*To prevent further biodiversity loss, Uzbekistan runs several rare and threatened species breeding centres.* The Species Breeding Centre "Jeyran", established over 40 years ago, specializes in breeding goitered gazelle. Two smaller nurseries were established in 2007 and 2008 for breeding the Asian houbara bustard. Zarafshan State Strict Nature Reserve (SSNR) operates a facility for breeding Bukhara deer.

*Uzbekistan makes considerable efforts to increase forested areas through reforestation and afforestation works.* In the period 2010–2018, forested areas increased from 6.63 per cent to 7.26 per cent of the country's territory. More and more areas are being placed in the state forest fund land category as land potentially suitable for afforestation.

*Formally, the protected area (PA) system encompassed 13.2 million ha or 29.4 per cent of the country's territory on 1 January 2019. However, it predominantly comprises state forest fund lands.* PAs in the common understanding of this term cover less than 2.1 million ha or only 4.63 per cent of the country's territory.

*There is a striking disparity in the geographical distribution of PAs among the regions of Uzbekistan.* The PA network is not yet ecologically representative, meaning that it does not cover all main representative landscapes and ecosystems. In addition, it does not encompass the habitats of several rare, endemic and threatened species.

*The most effective protection of biological and landscape diversity is ensured only in PAs granted legal entity status, which have their own managing body and field personnel.* The state budget funding for PAs is insufficient to implement effective nature conservation.

*There are some positive examples of the ecological connectivity of PAs on a local scale.* However, the national PA system of Uzbekistan is still not a "network" in the common meaning of the term. The concepts of ecological networks and ecological corridors are absent from the 2004 Law on Protected Natural Territories.

*The environmental disaster in the Aral Sea region, formerly abundant in flora and fauna species, resulted in a sharp decrease in biological diversity.* The Government's efforts focus on protection of biodiversity that survived the disaster and rehabilitation of aquatic and wetland ecosystems in the Amu Darya River delta through engineering works aimed at landscaping the delta for the restoration of aquatic and wetland ecosystems and stabilizing the water regime. The Government's efforts also aim at stabilization of the soils of the dried bed of the Aral Sea.

*Uzbekistan progressed with identification and description of important bird areas (IBAs) and key biodiversity areas (KBAs).* However, only 17 of the 52 IBAs and 12 of the 36 KBAs either partially or entirely overlap existing PAs.

*Neither of the two Ramsar sites, nor the PAs overlapping the territories of the Ramsar sites, have management plans.* The submission of nomination for a new Ramsar site, Tudakul and Kuymazar Water Reservoirs, has not been completed.

### Energy and the environment

*Primary energy supply is concentrated in fossil fuels, mainly natural gas, with some hydropower.* The development of local fuels such as natural gas and coal remains a goal of national energy policies.

*Information on accidents occurring in the natural gas industry focuses on economic aspects rather than*

*environmental impact.* Nevertheless, gas leakages cause the release of carbon monoxide, carbon dioxide, nitrogen oxides, sulfur compounds, methane, methanol and other pollutants. In the past few years, several natural gas processing facilities introduced new technologies to improve environmental protection.

*The volume of gas flaring has declined from 1.494 bcm in 2013 to 0.788 bcm in 2018.* The decrease was caused not only by reduction of oil production but also by measures implemented by oil production companies. The limited market and low prices for commercial gas, especially in remote areas, result in some gas still being flared.

*Coal mining is carried out at the open-pit Angren mine and underground mines Baisun and Shargun.* Angren deposit is developed by surface mining, with associated environmental problems such as large-scale land use, overburden removal and disposal, disturbance of hydrology, acid mine drainage and fugitive dust. For underground mines in the Baisun and Shargun deposits, the main environmental issues are mine water drainage, methane emissions and fugitive dust.

*Mining of uranium ore is carried out by the in-situ leaching (ISL) mining process.* Although some environmental impacts are minimized under the ISL method, such as there being no need for large uranium tailings, the productive solution has to be disposed of after the initial treatment. One of the challenges in the application of ISL is to prevent contamination of groundwater.

*In 2019, there is no renewable energy (other than hydro) generation in Uzbekistan, except for some off-grid and/or small-scale units.* The country's enormous technical potential for the use of solar energy is not used. Uzbekistan has set a target of 19.7 per cent of total energy production being produced by RES by 2025. Most of this (i.e. 15.8 per cent) is to come from hydropower.

*The Government is taking measures to increase energy efficiency.* Standards for energy management of industrial production and energy labelling of household equipment have been introduced. The introduction of energy-efficient technologies in the system of street lighting and energy-saving lamps for residential and public buildings is being carried out.

*Despite these measures, the energy intensity of the economy remains high.* No measures to increase energy efficiency in buildings and transport have been introduced. In industry, a World Bank project has greatly contributed to energy efficiency in many industrial enterprises but energy losses in the industrial sector at large remain high.

*Electricity transmission assets have not been properly maintained and upgraded, affecting the delivery of reliable power supply to domestic customers.* There is a high level of electricity losses: transmission system losses are 18 per cent and distribution losses are 14 per cent. Modernization of existing facilities is ongoing, along with the construction of additional generation capacities.

*Uzbekistan intends to build a nuclear power plant (NPP) in order to meet the growing needs of the economy for energy resources.* The Government plans to organize a national EIA and conduct a dialogue with neighbouring countries. The organization of a transboundary EIA is not planned. The country is not party to several key conventions on nuclear safety.

*Lake Tuzkan, identified as a priority location for the NPP, is part of the Aydar-Arnasay Lake System, which was declared a Ramsar site in 2008.* Construction of an NPP in the Ramsar site would require sound justification and may result in the need to delete or restrict the boundaries of wetlands already included in the Ramsar List, with these decisions potentially damaging the image of the country in the international arena.

### Agriculture and the environment

*Agriculture accounts for about 32 per cent of GDP and 27 per cent of employment.* In 2018, crop production made up 53.2 per cent of total agricultural production, while animal husbandry accounted for 46.8 per cent.

*In the period 2009–2017, water use in agriculture remained at around 89–92 per cent of total water use. Around one third of the total water use in this sector is lost.* By reducing or eliminating water losses, the country would be able to solve the problem of a forecast water deficit and save enough water to mitigate the fluctuations in

annual available water quantity caused by the variability of precipitation.

*Crop diversification has been central to governmental policies in the sector in the past decade.* Switching to higher value crops should decrease water consumption because water demand for cotton growing is higher than water demand for irrigation of most other crops. However, these positive gains may be nullified by the poor state of irrigation infrastructure.

*The Government started subsidizing the installation by farmers of water-saving techniques, in particular, drip irrigation.* However, water-saving techniques are clearly not expanding at an adequate pace. In 2019, the total area under water-saving techniques amounted to only 9.6 per cent of irrigated lands.

*Agriculture also puts pressure on water quality.* Farmers regularly "wash" their fields with water to decrease soil salinization. The water used for "washing" is directed back to the irrigation channels and rivers, even though it might contain pesticides and other pollutants.

*The use of fertilizers in Uzbekistan is 60–70 per cent higher than the world average.* The high consumption is a basic precondition for agricultural production on the country's irrigated lands, since the soil fertility would be very low without the use of fertilizers.

*Organic fertilizers are widely used, their consumption being 20 times higher than that of mineral fertilizers.* Manure makes up a significant proportion of the organic fertilizers.

*In the past decade, the Government has actively promoted biological plant protection.* More than 1,500 biological laboratories for processing crops by biological methods have been created in the country. In 2017, the amount of pesticides applied to arable land was only 0.4 kg/ha, whereas, in the final years of the Soviet Union, it was 15–19 kg/ha.

*The agricultural sector is the second biggest emitter of GHGs, accounting for 11 per cent of emissions in 2012.* Agricultural GHG emissions increased by 27.1 per cent in the period 1990–2012. Methane emissions from agriculture increased by 98.2 per cent in the same period, due to an increase in the number of cattle and sheep.

*Organic production is already ongoing in the country. Over 5,600 ha are certified for organic products by foreign certification organizations.* The legal framework for organic agriculture is still lacking, so the country does not issue certifications for organic agricultural products. The use of genetically modified organisms (GMOs) is not regulated at the level of laws.

*Agricultural extension services are not systematically provided.* The development of extension services remains important for improving the sector's performance towards productive and sustainable agriculture and resilience to climate change, in line with target 2.4 of the 2030 Agenda.

### Transport and the environment

*With a 9.4 per cent contribution to GDP in 2017, the transport sector attracts significant investment, which has already resulted in the improvement of the country's scores under the Logistics Performance Index, most prominently with regard to infrastructure.* The investments are also helping to improve the environmental performance of the sector.

*Road transport is by far the dominant mode of transport, with a market share of 98.3 per cent of passenger transport and 88.3 per cent of freight transport in 2018.* However, road vehicles are using low quality fuels leading to negative effects on the environment, among other impacts. This is facilitated by fossil fuel subsidies through regulated prices that incentivize the use of the lower quality fuels.

*Many vehicles run on natural gas or liquefied petroleum gas (LPG) as a result of local resource availability and the fiscal advantage associated with certain fuels.* Many compressed natural gas (CNG)/LPG fuel systems are retrofitted to vehicles that originally operated on gasoline or diesel. The quality, reliability and emissions from such retrofitted systems can be problematic unless the right measures are put in place to ensure they operate appropriately.

*The use of public transport in cities remains limited.* The largest cities are investing in renewing their fleets and improving accessibility of public transport in line with target 11.2 of the 2030 Agenda, as well as in making the alternative modes of transport more attractive. However, these initiatives are not supplemented by dedicated policies and action plans.

*Investments in the railway sector are under way to improve its efficiency and reduce the environmental impact of transport as a whole.* In 2019, the locomotive fleet is about 28 per cent electric and 72 per cent diesel powered.

*The aviation sector is also in the midst of reforms.* Efforts in this area have focused on the management aspects, modernization of the fleet to reduce $CO_2$ and noise emissions and provision of flight services in accordance with international standards. Domestic aviation remains very limited.

*In terms of air pollution, the transport sector was the highest NOx emitter, accounting for 63 per cent of NOx emissions in 2016.* The sector was responsible for 9.6 per cent of TSP emissions in 2016.

*Transport accounted for 12.4 per cent of GHG emissions from fuel combustion or 6.6 per cent of total GHG emissions without LUCF in 2012.* In 2012, the largest contributors to $CO_2$ emissions from transport were road vehicles (63 per cent).

*The transport sector is expected to grow dramatically in the coming decades, with resulting growth in $CO_2$ emissions.* The For Future Inland Transport Systems (ForFITS) tool demonstrates opportunities for decoupling economic growth and $CO_2$ emissions in Uzbekistan.

*The number of road fatalities has remained steady since 2015 with only minor fluctuations, at around 80 fatalities per million inhabitants.* The number is not decreasing in Uzbekistan and is well below the requirements in target 3.6 of the 2030 Agenda. The enforcement of driving and road safety laws and regulations presents challenges.

### Industry and the environment

*In 2018, the industrial sector accounted for 23.3 per cent of GDP, of which manufacturing industries represented 15.5 per cent and mining and quarrying 6 per cent.* The share of manufacturing industry in the structure of industrial output reached 76.6 per cent in 2018.

*Uzbekistan aims at diversification of its economy through the development of non-resource-based sectors and increasing the manufacturing of higher-value-added products.* The modernization and diversification of leading industries and introduction of innovation are already taking place.

*Policy documents on the development of specific industrial sectors do not include environmental safeguards.* The lack of clear environmental, health and safety and social management objectives lessens the contribution of the sector to the well-being of local communities.

*There is no consistent trend in the total volume of industrial air emissions since 2009.* However, monitoring data show continuous exceedance of emissions of nitrogen oxides, sulfur dioxide, carbon oxides, ammonia and dust, mainly by chemical industry, energy and construction industry enterprises.

*Many of the largest enterprises are carrying out modernization to reduce air emissions, making the country better prepared to achieve target 9.4 of the Sustainable Development Goals.* However, technological upgrading is still lagging behind in small and medium-sized enterprises (SMEs).

*Mining, chemicals, oil and gas, electricity and the production of construction materials are among the country's most energy-intensive industries.* National policy documents set enterprise-specific targets for the reduction of energy consumption. Impressive improvements have been achieved through the implementation of the World Bank's Energy Efficiency Facility for Industrial Enterprises Project, which finances energy-saving investments in both large enterprises and SMEs.

*The industrial sector's share of total water use was negligible (on average, 1.4 per cent in the period 2009–2017), but water pollution from the chemical, oil, manufacturing and metallurgical industries is a major issue.* Many industrial enterprises do not have wastewater treatment facilities on their premises or do not carry out preliminary

treatment. Industrial wastewater is often discharged directly into rivers or into urban sewerage systems.

*Approximately 100 million $m^3$ of industrial waste is generated in the country annually.* Due to the insufficient number of landfills for storage and disposal of industrial waste, there is a widespread practice of dumping in unauthorized places. In recent years, several mining and chemical enterprises have shifted to technologies that allow more efficient extraction and production and generate less hazardous waste.

*Soils are severely degraded by mining activities, which remove large amounts of soil and vegetation for open pit mining.* Furthermore, soil contamination with heavy metals is observed in the areas located in close proximity to industrial enterprises.

*Artisanal and small-scale mining can be the source of large releases of mercury, which can have serious health impacts.* The number of illegal gold miners is estimated at 30,000 but detailed information is not available to evaluate health impacts from these activities in Uzbekistan.

### Human settlements and the environment

*The country's land fund has seen profound changes in terms of the distribution of land between categories.* "Agricultural land" decreased from 72.76 per cent in 1990 to 45.13 per cent in 2018, along with an almost fivefold increase in "forest fund lands" – from 5.50 per cent to 24.84 per cent in the same period. The high share of "reserve lands" (24.16 per cent in 2018) indicates a large potential for designation of new PAs.

*The population grew from 28.56 million in 2010 to 32.66 million in 2018. This has been accompanied by high rates of urbanization.* In 2019, about 50.5 per cent of the population lives in urban areas, whereas, in 2012, 36 per cent of the population lived in urban areas.

*The rapid growth of cities increased the number of people exposed to the effects of "urban" climate change.* Climate adaptation planning in urban areas and rural settlements has not yet been introduced.

*The majority of the housing stock dates to the Soviet period, but housing stock in Tashkent and other big cities is undergoing an injection of new construction.* The new buildings commonly lack representation of the typical elements of Uzbek design.

*Uzbekistan has not yet introduced a proper system of participatory urban planning and management.* New architectural undertakings require the approval of the territorially-competent makhalla chairperson, but local inhabitants often complain because of the lack of information and public involvement in the decision-making process. This makes target 11.3 of the 2030 Agenda of particular importance to the country.

*The implementation of urban development and construction policies in recent years has resulted in numerous cases in which the rights of inhabitants of buildings ordered for demolition were violated.* Several cases are reported of people receiving an order to leave their residences to allow for new buildings to be built, without the provision of new housing or adequate compensation.

*Main roads and green areas in major city centres are, in general, in good condition.* However, infrastructure such as electricity, heating, and sewerage and drainage networks, in most cases, needs upgrading, maintenance or replacement.

*The existing housing stock is highly energy inefficient.* Construction standards changed in 2018 and introduced new energy efficiency requirements. However, they apply to new projects and are not applicable to existing buildings.

*The housing sector is partially accountable for the deterioration of urban air quality.* Construction sites lack specific regulations to prevent pollution due to particulate matter and dust.

*Asbestos is extensively used as a construction material.* The population is largely not aware of its danger for human health.

*Green areas inside urban and rural settlements occupy, on average, 0.1–2 per cent of the territory of a settlement.* Uzbekistan makes efforts to increase the number of trees planted in urban areas, with the ambition to also create green belts around major cities. The concept of an urban ecological network is not implemented in Uzbekistan.

*Several national programmes and projects have been developed to protect and promote Uzbekistan's cultural heritage.* However, the preservation of some sites suffers from the absence of management plans, inadequate restoration interventions and the construction of modern buildings.

## Health and the environment

*Life expectancy in Uzbekistan has increased by approximately five years since 1995.* Nevertheless, it is still one of the lowest in the WHO European Region. The same holds true for maternal, neonatal and under-5 mortality rates, which have decreased in Uzbekistan but remain among the highest in the WHO European Region.

*Non-communicable diseases (NCDs) continue to represent by far the major share of deaths and of years of life lost in the country.* Environmental pressures, such as exposure to air pollution and noise, contribute to high levels of blood pressure and low birth weight, which are among the most important risk factors for NCDs in the country, along with poor diet, child and maternal malnutrition and tobacco use.

*The incidence and prevalence of some communicable diseases, such as tuberculosis (TB) and, in particular, multidrug-resistant TB, remain a concern.* TB incidence rates, which began declining steadily around 2005, remain twice as high as those in the WHO European Region. Within the country, the Republic of Karakalpakstan and Tashkent Oblast have the highest incidence of TB.

*Environment-related health risks and hazards remain high.* The annual mortality rate attributed to household and ambient air pollution was estimated by WHO at 81.1 cases per 100,000 population in 2016, ranking the country fifth in the WHO European Region. The burden of disease due to diarrhoea due to a lack of adequate water, sanitation and hygiene was estimated at about 14,860 disability-adjusted life years (DALYs) in 2016, ranking the country sixth in the WHO European Region.

*There is no integrated information system on population health, its determinants and trends in the country.* There is a huge data and information gap on health determinants and risk factors, including environmental factors. Information relevant to the health of children and other vulnerable population groups is very limited.

*Climate change in Uzbekistan is bringing excessive rates of cardiovascular and respiratory morbidity and mortality and acute intestinal infections.* Furthermore, a significant number of people live in areas prone to flash floods, mudflows, heatwaves, droughts and dust storms, which are becoming more frequent and intense, resulting in excessive rates of morbidity and mortality.

*There are no systematic policy actions targeted to protecting people's health from climate change and to reducing life-threatening risks from natural disasters.* The capacity of the health sector to assess climate-change-related health status and trends as a basis for planning preventive measures and monitoring their effectiveness is insufficient.

*The current surveillance system is prone to underreporting.* Surveillance of infectious diseases, in particular, water- and food-borne diseases and human zoonoses, has severe limitations. Detection of pathogens in water supply and food products is rather limited.

*The Aral Sea crisis has brought a large burden of disease and disability to the population, in particular in the Republic of Karakalpakstan and Khorezm Oblast.* In 2017, in Khorezm Oblast, morbidity from diseases of the nervous, circulatory, digestive and urological (kidney stones) systems was higher than the national averages by about 50 per cent. According to the data for the period 2009–2017, in the Republic of Karakalpakstan, morbidity from acute intestinal infections was well over the national averages during the entire period (by an average of 60 per cent).

## Successes in the past decade and priorities for the future

The top 10 environmental achievements in the period 2010–2019 include:[1]

- Increasing afforestation activities to address the impacts of the Aral Sea disaster;
- Conducting engineering works aimed at restoration of aquatic and wetland ecosystems in the Amu Darya River delta;
- Tremendous efforts to raise the attention of the international community to the Aral Sea disaster;
- Reforms of municipal waste management;
- Investments to expand water supply and sanitation and introduce water metering;
- Launch of incentive schemes for farmers to apply water-saving techniques;
- Implementation of enterprise-specific targets to reduce energy consumption and introduction of energy-efficient measures in the residential and public sectors;
- Investments in electrification of railways and acquisition of new rolling stock;
- Well-developed environmental education;
- Adherence to the Sustainable Development Goals through the adoption of national goals and targets.

The top 10 environmental priorities for the next 5–10 years include:[2]

- Make all data and information on the environment available to the public and enable meaningful public participation in environmental matters and urban planning;
- Join global and regional MEAs that the country is not party to;
- Improve environmental assessment by reforming EIA/SEE and introducing SEA;
- Automate environmental monitoring and start monitoring $PM_{10}$ and $PM_{2.5}$;
- Expand PAs and ensure the ecological connectivity and representativeness of the PA network;
- Increase efforts to address water losses in agriculture;
- Take measures to decrease the carbon and energy intensity of the economy and introduce support measures for RES, in particular, solar energy;
- Improve management of wastewater from industrial enterprises and develop sanitary landfills;
- Rehabilitate uranium legacy sites and eliminate risks from obsolete pesticides and other POPs;
- Reduce the environment- and climate-change-related health risks and hazards and improve road safety.

[1] No ranking applies.
[2] No ranking applies.

# *CONCLUSIONS AND RECOMMENDATIONS*

## Chapter 1: Legal, policy and institutional framework

*Assessment*

In 2019, Uzbekistan is in the midst of intensive reforms of its legal, policy and institutional frameworks, including in the environmental area.

The developments in environmental legislation include the adoption of a brand new Law on Environmental Control in 2013, new Law on the Use of Renewable Energy Sources in 2019, new editions of the Law on Protection and Use of Flora and Law of Protection and Use of Fauna in 2016 and of the Law on Forests in 2018. Several new draft laws are in the process of preparation and the country is about to embark on drafting an environmental code. To date, the policy framework on environmental protection has been based on five-year programmes of action on environmental protection that facilitated the allocation of substantial funding for environmental protection measures. No such programme was adopted for the post-2017 period but in 2019 the country developed and approved the Concept on Environmental Protection until 2030 as a long-term visionary document for this area.

The ongoing rapid development of the entire national policy framework represents opportunities for mainstreaming environmental protection throughout sectoral policies and legislation. The integration of environmental requirements into sectoral legislation and policies has started in the transport, housing and infrastructure, industry, health and tourism sectors. It is more advanced in the energy and agricultural sectors. Nevertheless, such integration can be characterized as selected developments rather than systematic efforts to green the economic sectors through proactive inclusion of environmental requirements in sectoral policies and legislation. SEA – a key tool for the integration of environmental considerations into sectoral policies – is not available in Uzbekistan.

With regard to the institutional framework, the major development is the change, in 2017, in subordination of the national environmental authority from the Oliy Majlis to the Cabinet of Ministers. Formally, this is a slight decrease in status; however, in practice, the status of SCEEP is still relatively high and its subordination to the Cabinet of Ministers brings increased operational opportunities. Moreover, SCEEP is well respected among governmental authorities and its informal status within the Government is quite high. At the same time, the establishment of new, separate ministries for several major economic sectors during the period 2017–2019 demonstrates the intention of Uzbekistan to rapidly develop its economy. In these circumstances, effective horizontal coordination mechanisms and meaningful public participation become of utmost importance to ensure that environmental protection is not set aside.

*Conclusions and recommendations*

Sustainable Development Goals

In the period 2016–2018, the country worked intensively to define the national Sustainable Development Goals – the process that culminated in the adoption of the 16 national goals, 125 national targets and 206 national indicators. While some elements of the national targets and indicators may be debatable, e.g. the absence of some global targets and indicators among the national ones, the national process of adaptation has greatly contributed to ownership and awareness of the Sustainable Development Goals among government officials.

The institutional set-up for coordination of implementation and monitoring of the national Sustainable Development Goals is well defined. It is centred around the Coordination Council on Implementation of National Sustainable Development Goals, headed by the Deputy Prime Minister and supported by six expert groups and the Interagency Working Group on national Sustainable Development Goals indicators. However, the Coordination Council membership is exclusively governmental and the composition of the expert groups is largely governmental.

Sustainable Development Goals are already mentioned in some recently adopted policy documents. Nevertheless, explicit integration of the national Sustainable Development Goals and their indicators into the national strategic documents is an important direction for development.

In February 2019, the State Committee on Statistics launched a section on the national Sustainable Development Goals on its website. In March 2019, 206 national indicators were approved. These are positive steps towards regular reporting on the national Sustainable Development Goals. However, the list does not include the baseline, midterm and final values to be achieved, although baseline data are available for about 70 indicators. The frequency of national reporting is not yet set. In 2019, Uzbekistan took a decision to prepare a voluntary national review in order to present it in 2020.

*Recommendation 1.1:*
*The Cabinet of Ministers should:*

*(a) Ensure regular and transparent activities throughout the entire institutional framework for national Sustainable Development Goals implementation and monitoring;*
*(b) Ensure the effective participation of civil society in the institutional framework for national Sustainable Development Goals implementation and monitoring;*
*(c) Actively involve the local authorities in implementation and monitoring of the national Sustainable Development Goals, in particular to reduce the regional differences in the achievement of the national targets;*
*(d) Ensure that the national Sustainable Development Goals are explicitly integrated into all future strategic planning documents;*
*(e) Define baseline, midterm and final values to be achieved for national Sustainable Development Goals indicators;*
*(f) Ensure the regular preparation of reports on national Sustainable Development Goals implementation;*
*(g) Ensure that a voluntary national review is organized in 2020 with the involvement of all stakeholders in its preparation;*
*(h) Consider reviewing the national targets with a view to encompassing additional targets in line with the 2030 Agenda for Sustainable Development.*

Strategic documents on environmental issues

Strategic planning in Uzbekistan functions relatively well. Strategic documents, including those on environmental protection and on sectoral development with a possible impact on the environment, clearly define timelines and responsibilities for implementation, as well as sources of financing. Financing for implementation of strategic documents is allocated and comes primarily from the state budget. Quantitative indicators of implementation are increasingly used, including those under international indexes. However, only limited information on the implementation of strategic documents is publicly available. Implementation reports are produced but never appear on the public authorities' websites.

As at 2019, strategic planning on environmental protection is developing dynamically at the national level, with the recently adopted Concept on Environmental Protection until 2030 and policy documents on biodiversity and on solid waste management. Ensuring due consideration of issues that have been poorly reflected in the policy documents so far (such as climate change, low carbon development, environmental compliance and enforcement, forest protection, soil protection, environmental noise, etc.) is among the challenges to be faced in current efforts to shape the national-level policy framework.

At subnational level, almost no strategic documents on environmental protection have been adopted by local authorities, despite the relevant responsibilities envisaged by several environmental laws.

*Recommendation 1.2:*
*The Cabinet of Ministers should ensure:*
*(a) Comprehensive coverage of the entire spectrum of environmental issues in the national policy framework;*
*(b) Provision of free online access to the reports on implementation of strategic documents on environmental protection and on sectoral development with a possible impact on the environment;*

*(c) Support to local authorities in the development and adoption of strategic documents on environmental protection.*

Strategic environmental assessment

Uzbekistan does not apply the SEA tool for evaluation of environmental impacts of future sectoral strategic documents. The lack of SEA prevents systematic, coherent and comprehensive integration of environmental measures and requirements into sectoral policies, plans and programmes. In turn, introduction of the SEA tool could help Uzbekistan to enhance policy coherence for sustainable development in line with target 17.14 of the 2030 Agenda for Sustainable Development.

As at early 2019, awareness of the SEA tool is still limited in the country. Key challenges for the introduction of the SEA system are raising the understanding and acceptance of the SEA tool among the sectoral ministries.

*Recommendation 1.3:*
*The State Committee on Ecology and Environmental Protection should progressively introduce strategic environmental assessment (SEA) by:*

*(a) Developing the legal framework to introduce a fully fledged SEA system in line with the Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context;*
*(b) Ensuring that SEA and EIA are part of a coherent environmental assessment framework;*
*(c) Raising awareness and providing capacity-building on SEA to governmental authorities and other stakeholders;*
*(d) Organizing one or more pilot SEAs.*

Horizontal coordination

Uzbekistan used to have many interagency councils and commissions, but, in 2018, their number was decreased with a view to rationalizing the activities of such bodies and abolishing ineffective ones. Several interagency councils related to environmental protection issues were then dismantled. As at early 2019, there are not many interagency bodies focused on environment-related issues and those that are relevant do not cover the entire spectrum of environmental issues typically requiring interagency coordination (climate change, environmental health, chemicals or air pollution). The existing interagency bodies do not include representatives of other stakeholders, such as NGOs, businesses and academia, along with governmental bodies and institutions. Little information about the activities of such bodies is made available to the public. Strengthening the mechanisms for horizontal coordination on issues concerning the environment and sustainable development is crucial for Uzbekistan if it is to achieve its national target 17.14 and global target 17.14 of the 2030 Agenda for Sustainable Development.

*Recommendation 1.4:*
*The Cabinet of Ministers should strengthen horizontal coordination on environmental protection issues by:*

*(a) Reviewing the need for interagency coordination in the areas of climate change, environmental health, chemicals and air pollution or other areas requiring such coordination;*
*(b) Ensuring meaningful stakeholder participation in interagency councils and commissions;*
*(c) Making meeting reports of the interagency councils and commissions publicly available.*

*See Recommendations 7.2, 17.6.*

**Chapter 2: Regulatory and compliance assurance mechanisms**

*Assessment*

Since 2010, Uzbekistan has actively implemented a number of policy, legal and institutional measures aiming at reduction of the administrative burden and improvement of general "business-enabling conditions". This concerned, inter alia, environmental regulatory and compliance assurance mechanisms such as environmental

permitting and inspection procedures, as well as profound changes to the institutional framework. Undoubtedly, some of the changes had positive effects for the business environment in the country, in particular the electronic single-window system served by centres of public services operated by the Ministry of Justice.

Nevertheless, self-regulation by industry and voluntary environmental compliance by companies alone cannot ensure favourable conditions for human life and citizens' health, as well as the sustainable development of the country, without effective governmental environmental regulation and enforcement. In this regard, it is also worth noting that voluntary compliance promotion instruments such as environmental audit, EMS, labelling and voluntary environmental reporting by enterprises are not yet actively applied in Uzbekistan.

The Government is paying more attention to public participation in decision-making and to citizens' active role in enforcement of environmental legislation, but there are challenges in putting these instruments into practice.

*Conclusions and recommendations*

Environmental impact assessment/state ecological expertise

EIA and SEE remain the key tools for the assessment of environmental risks of planned activities and identification of possible solutions for their prevention and mitigation. EIA is integrated into the SEE procedure, which is undergoing a process of reform, with some changes already adopted and others under consideration by the Government.

The recent changes in the procedure of SEE have limited the possibilities for further development of EIA. The short time limits for conducting SEE do not provide sufficient time to take due account of the outcomes of the EIA, curtailing the possibility of thorough study of relevant documentation by SCEEP as well as for public participation in those decision-making process. Several other aspects in the EIA/SEE legislation of Uzbekistan are not in conformity with the international standards laid down and promoted globally by the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters and the Convention on Environmental Impact Assessment in a Transboundary Context.

*Recommendation 2.1:*
*The Cabinet of Ministers should revise the legal and regulatory framework on state ecological expertise in line with international standards laid down by the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters and the Convention on Environmental Impact Assessment in a Transboundary Context, in particular such aspects of the environmental impact assessment as screening, scoping, effective public participation and transboundary impact assessment, and by extending the relevant time limits.*

Inspections

New inspection procedures have been introduced in Uzbekistan instead of scheduled inspections, which previously served as the main instrument for environmental compliance monitoring and detection of environmental offenders. The new system of inspections is based on the assumption that compliance monitoring can be triggered effectively by citizen complaints or by inspectorates on the basis of risk analysis of business activities. However, if this new system is to work, critical elements that are currently lacking must be included, in particular, effective public access to environmental information on planned development projects and ongoing industrial activities.

There has been some refocusing of SCEEP's environmental enforcement activities, from prevention of environmental pollution and industrial accidents to prosecuting environmental offences by small businesses and individuals. In these circumstances, excessive environmental deregulation may, in turn, aggravate the existing environmental pollution caused by industries.

Information on inspection activities by SCEEP is not publicly available.

There is a lack of information and statistical data on enforcement activities by the public environmental inspectors, though, reportedly, thousands of citizens were issued identity cards as public environmental

inspectors. While this initiative is potentially a positive development, the lack of data prevents thorough analysis of this tool.

*Recommendation 2.2:*
*The State Committee on Ecology and Environmental Protection should:*

*(a) Develop effective mechanisms for citizen environmental enforcement by ensuring public access to the environmental information on planned and ongoing development projects and by providing incentives to citizens for triggering environmental compliance review through submission of complaints to enforcement authorities, including on environmental aspects of industrial activities;*
*(b) Develop and implement measures to strengthen the capacity of environmental inspectors for planning inspections on the basis of risk assessment of industrial and mining facilities;*
*(c) Regularly disclose data and information about the performance of the environmental compliance assurance system;*
*(d) Ensure that data on activities of public environmental inspectors are available to enable effective use of this tool.*

Compliance promotion instruments

Following the request by the President, a draft law on environmental audit has been developed in 2019. The Regulation on voluntary eco-labelling of products was approved in May 2019. The President has also requested large mining and smelting companies to join the global initiatives on voluntary environmental and sustainability reporting – a measure that would bring Uzbekistan closer to implementing Goal 12 and target 12.6 of the 2030 Agenda for Sustainable Development. In the circumstances of the reduction of environmental inspections carried out at enterprises, the application of voluntary compliance promotion instruments is critically important. At the same time, a low level of public environmental awareness and lack of incentives could lead to the pro forma practical application of eco-labelling, eco-certification and voluntary corporate environmental and sustainability reporting.

*Recommendation 2.3:*
*The State Committee on Ecology and Environmental Protection should:*

*(a) Develop and provide incentives for the application of environmental audit;*
*(b) Raise awareness of global initiatives on voluntary environmental and sustainability reporting by companies;*
*(c) In cooperation with the Uzbek Agency for Standardization, Metrology and Certification, promote scheme-based eco-labelling, including the application of internationally recognized eco-labelling schemes, and raise public awareness of eco-labelling.*

Liability and compensation

One of the challenges in the area of environmental liability is the lack of proportionality of administrative fines set for various types of environmental non-compliance and for environmental offences by individuals and companies. In many cases, the level of administrative fines is too low to act as a deterrent to prevent violations.

The legislation on liability focuses on payment of compensation for harm to the environment. There are no established procedures and provisions to enable individuals and NGOs to claim in the courts compensation for damage to their health and property due to violation of environmental legislation.

The Law on Nature Protection contains provisions on compulsory and voluntary environmental insurance, but they are not sufficient for implementation. No subsidiary legislation has been adopted. The mechanism of environmental insurance does not function.

*Recommendation 2.4:*
*The Cabinet of Ministers should initiate:*

*(a) A review of the proportionality of administrative fines for environmental offences on the basis of consideration of their deterrent effect and possible environmental impact;*
*(b) The development of legislation providing the right of individuals and NGOs to claim compensation for damage to their health and property due to violation of environmental legislation;*
*(c) Development of the legal framework enabling the application of compulsory and voluntary environmental insurance.*

**Chapter 3: Greening the economy**

*Assessment*

In the context of a wave of major economic reforms initiated by the President since 2016, there has been marked progress towards greening of the economy in several areas. These include, notably: tariff reform for utility services; raising the water use tax; liberalization of prices of imported motor fuels; mobilization of funds for upgrading of municipal infrastructure for water supply and sewerage services and solid waste management; paving the way for a larger role for the private sector in the provision of utility services within the framework of PPPs; and establishing the basis for a more effective public procurement system. The Strategy for Transition to Green Economy for the period 2019–2030 firmly states the country's commitment to green economy.

These positive developments contrast with the fact that the existing, old system of pollution charges has remained largely unreformed, with the main exception that charge rates are now better protected against erosion through inflation; however, these charges are mainly designed to generate revenue for the environmental fund and the state budget.

Total public sector spending on environmental protection appears to be rather low in view of the existing environmental challenges.

*Conclusions and recommendations*

Pollution charges

The system of pollution charges is operated without a government strategy concerning environmental policy targets to be achieved. The number of air and water pollutants subject to payment of charge rates is also much too large for this. Air pollution charges can be an effective tool when they are targeted at a few major pollutants and a few major emitters, such as power plants and large industrial facilities, which is the practice in many industrialized countries. It is also questionable whether hazardous air and water pollutants and hazardous waste should be subject to pollution charges and would not better be controlled based on stringent regulations in permits. The air pollution charges for mobile sources (enterprise vehicles) amount to double taxation, given that enterprises also have to pay the standard excise rates on motor fuels as do owners of private passenger motor cars.

*Recommendation 3.1:*
*The State Committee on Ecology and Environmental Protection should:*

*(a) Reform the system of pollution charges by focusing on (a few) major air and water pollutants;*
*(b) Abandon the pollution charges on enterprise vehicles to avoid double taxation;*
*(c) Replace the pollution charges on industrial waste with cost-reflective tariffs for waste collection, transport and disposal;*
*(d) Ensure effective pollution control and abatement by a judicious combination of pollution charges and command-and-control regulation.*

Taxation of fuel

There has been little progress in the area of taxation of transport motor fuels, such as petrol and diesel. Tax rates are very low and hardly provide incentives for fuel savings. The Government has liberalized prices of imported higher quality fuels, but prices of domestically produced motor fuels continue to be regulated and subsidized.

*Recommendation 3.2:*
*The Cabinet of Ministers should continue with the liberalization of prices of motor fuels and raise tax rates on motor fuels, taking into account the development of incomes of the population.*

Utility tariffs

The Government has made progress on reform of tariffs for utility services (energy, water, waste) by bringing them closer to cost-recovery levels. Tariffs below cost-recovery levels provide across-the-board benefits to all households, which mainly favour those with higher incomes, given that they tend to consume more energy and water resources than lower-income households. Low energy and fuel prices for domestic consumers have, moreover, depressed the financial resources that the energy sector needs for the rehabilitation and expansion of the energy sector infrastructure. Low prices are blunting incentives for investments in energy efficiency, which is potentially a large source for reducing energy consumption and related fossil fuel subsidies. In the water sector, more rational use of water resources could also be achieved by installing water meters, which are lacking for a large proportion of the population and at the point of water abstraction. Implementation of a governmental programme to increase the proportion of households with water meters during the period 2019–2021 is crucial in this respect.

Also lacking is an effective mechanism for providing targeted social assistance for vulnerable consumers, including lower-income households that are facing higher utility charges due to more cost-reflective tariffs. The latter is one of the instruments for ensuring that the poor and vulnerable have adequate access to basic services in line with target 1.4 of Sustainable Development Goal 1.

*Recommendation 3.3:*
*The Cabinet of Ministers should:*

*(a) Continue the process of gradually bringing utility tariffs to cost-recovery levels;*
*(b) Support measures designed to ensure comprehensive and accurate water metering from the stage of water abstraction to the stage of final water consumption;*
*(c) Design an effective mechanism for providing targeted social assistance to ensure vulnerable consumers have adequate access to utility services.*

Support for renewable energy

The Government has identified the introduction of renewable energy as one of its priorities under the 2017 Action Strategy on Five Priority Directions for Development for the period 2017–2021. The 2019 Law on the Use of Renewable Energy Sources, provides, inter alia, for incentives for the production of renewable energy. The increased use of renewable (solar, wind) energy can be expected to be associated with multiple benefits in terms of energy security, economic efficiency, new business opportunities and associated job creation, as well as health benefits from reduced use of fossil fuels. But a government strategy concerning support schemes needed for the promotion of renewable energy is lacking, which creates investor uncertainty. A major constraint on the promotion of RES is the abundance of traditional domestic energy sources and the prevailing fossil fuel subsidies, which impede progress with target 12.c of the 2030 Agenda for Sustainable Development related to the rationalization of fossil fuel subsidies. At the same time, the planned phasing out of fossil fuel subsidies should continue taking into account the considerations of all parts of the population, according to the "leave no one behind" principles.

*Recommendation 3.4:*
*The Cabinet of Ministers should continue the planned phasing out of fossil fuel subsidies and the ongoing transition to cost-reflective energy tariffs, while coordinating and synchronizing them with the introduction of effective renewable energy sources support schemes, incentives, such as feed-in tariffs, and competitive bidding auctions for promoting the increased use of renewable energy.*

Tax on use of water resources

The tax on use of water resources (water abstraction) was reformed by better differentiation of user categories and raising tax rates with a view to creating stronger incentives for water savings and eliminating existing implicit

subsidies. A major exemption remains in that water companies do not have to pay for water abstracted for the purpose of supplying drinking water to households and other final users. Another exemption is that water abstracted for irrigation in agriculture is free. Moreover, revenues from the water use tax are allocated to local governments for spending on general purposes, although the water abstraction infrastructure is very old and needs rehabilitation and modernization.

*Recommendation 3.5:*
*The Cabinet of Ministers should:*

*(a) Apply the water use tax to all water abstracted by water companies;*
*(b) Review the costs and benefits of introducing water abstraction charges for irrigation water to recover the costs of water delivery to the operational areas of water user associations;*
*(c) Earmark revenues from the water use tax for the financing of water sector infrastructure management.*

Environment-related funds

The Government has replaced the former system of environmental funds, which was dominated by local funds and left only a more residual role for a so-called national environmental fund, by a single national fund – the Fund for Ecology, Environmental Protection and Waste Management. In the context of limited financial resources, this may provide more scope for focusing on national priorities without neglecting existing and emerging regional/local environmental problems. The operational rules and procedures of the national fund are not very transparent. There is also no published annual report on revenues at the disposal of the Fund for Ecology, Environmental Protection and Waste Management and on revenues and expenditures on individual projects in the various environmental domains supported by the Fund. In a similar vein, expenditures on environmental protection financed from the consolidated state budget do not include off-budget funds of budget organizations such as the Forestry Development Fund and the Fund for Development of Water Supply and Sanitation Systems.

*Recommendation 3.6:*
*The Cabinet of Ministers should ensure the publication of detailed annual reports on revenues and expenditures of the Fund for Ecology, Environmental Protection and Waste Management, Forestry Development Fund and Fund for Development of Water Supply and Sanitation Systems.*

Public–private partnerships

Uzbekistan has started developing the institutional and legal framework for the establishment and effective management of PPPs, which are seen as a means for obtaining private financing for procuring and maintaining public sector infrastructure in sectors such as public utilities and transportation. Target 17.17 of the 2030 Agenda for Sustainable Development encourages the formation of effective PPPs as a resourcing strategy. However, PPPs have a number of benefits and costs and should therefore be carefully designed.

*Recommendation 3.7:*
*The Cabinet of Ministers should:*

*(a) Strengthen efforts to establish an effective and transparent public–private partnership (PPP) framework that meets advanced international standards;*
*(b) Ensure that the administrative capacities and competencies for the evaluation of the benefits and costs of PPPs are developed.*

Public procurement

The 2018 Law on Public Procurement provides the legal foundation for raising public procurement practices to levels corresponding to international standards met by more advanced economies. The Law paves the way for green public procurement by establishing that the implementation of public procurement must take into account "the preservation of a favourable environmental situation."

As at early 2019, the Government has not yet developed an effective policy framework and allocated sufficient human resources for public procurement of works and services in order to be able to base purchasing decisions

not on a price-only criterion but to use a multi-criteria approach that considers various dimensions of quality, notably environmental impacts, in addition to price. This would allow public procurement to deliver "value for money" and, at the same time, promote the greening of public procurement in line with target 12.7 of the 2030 Agenda for Sustainable Development. Useful guidance in this respect may be drawn from the 2019 ECE Recommendation No. 43 on Sustainable Procurement.

*Recommendation 3.8:*
*The Cabinet of Ministers should:*

*(a) Ensure that subsidiary legislation on public procurement is developed to enable the use of a multi-criteria approach that considers, inter alia, environmental impacts;*
*(b) Allocate sufficient human resources and raise the capacity of staff working on green public procurement.*

**Chapter 4: Environmental monitoring, information and science**

*Assessment*

State environmental monitoring is carried out in accordance with the Programme of Environmental Monitoring coordinated by SCEEP. The air quality, surface water quality, soil pollution and radiation monitoring networks run by Uzhydromet cover all the requirements of the Programme of Environmental Monitoring for the period 2016–2020. Monitoring frequencies and parameters are in line with normative provisions but *automatic* monitoring/data collection, data quality control, processing and transfer is non-existent, preventing any type of continuous monitoring or collection of data in real time and often preventing the timely provision of monitoring data to other relevant institutions including SCEEP as the coordinating authority. Hydrological observations and both processing and transmission of observation data is also mostly carried out manually. The 2019 Resolution of the Cabinet of Ministers No. 737, which approved the new Regulation on Environmental Monitoring, addresses these gaps and is expected to foster improved data collection, sharing and transfer procedures. Regarding atmospheric air pollution, the lack of monitoring of $PM_{10}$ and $PM_{2.5}$ is a clear drawback; provisions for large-scale introduction of automatic air quality monitoring stations under Resolution No. 737 are expected to address this problem. While the inclusion, since 2011, of biodiversity monitoring in the five-year programmes of environmental monitoring is an achievement, noise monitoring activities are still not part of the programme of environmental monitoring.

Uzbekistan does not yet fully implement SEIS principles of open access to environmental data. Only a limited number of environment-related data are made publicly available, and almost none is available online. The establishment of an integrated environmental database at SCEEP that would link with the environmental databases of all other public authorities operating environmental monitoring activities under the scope of the Programme of Environmental Monitoring is yet to take place. Most of the environmental reports and bulletins produced by government agencies under the scope of the Programme of Environmental Monitoring are not publicly available.

In March 2019, Uzbekistan progressed with defining 206 national Sustainable Development Goals indicators and operationalizing the national Sustainable Development Goals portal. The challenges include the non-availability of data and methodologies for the vast majority of national environment-related indicators, as well as the limited online availability of data on environment-related indicators on the national portal.

In the absence of sectoral prioritization in the implementation of Uzbekistan's Innovative Development Strategy for 2019–2021, there is also no prioritization of financing for scientific research and innovation in support of environmental protection.

*Conclusion and recommendations*

Environmental monitoring

Environmental data monitoring/collection, quality control, processing and transfer is mostly undertaken manually, resulting in the unavailability of any real-time data. In the particular case of atmospheric air pollution, $PM_{10}$ and $PM_{2.5}$ are not monitored. Noise monitoring activities are absent in the five-year programme of

environmental monitoring.

*Recommendation 4.1:*
*The Cabinet of Ministers should ensure that:*

*(a) The Programme of Environmental Monitoring includes measures to promote further automation and digitalization of the state environmental monitoring;*
*(b) The State Committee on Ecology and Environmental Protection, in coordination with Uzhydromet and other relevant government bodies, automates data collection, quality control and transfer in general towards the establishment of a continuous monitoring and real-time pollution data collection system, particularly with regard to the atmospheric air pollution monitoring network;*
*(c) Noise monitoring activities are initiated and integrated in the Programme of Environmental Monitoring.*

*See Recommendation 8.2.*

Analytical laboratories

Most analytical laboratories under concerned ministries and agencies with responsibilities in the implementation of the Programme of Environmental Monitoring lack accreditation. Regional laboratories under Uzhydromet analyse air pollution samples only and lack sufficient capacity to analyse water pollution and soil pollution samples. In addition, the Centre for Specialized Analytical Control on Environmental Protection (CSAC) is not equipped with enough portable (mobile) laboratories to enable it to efficiently and effectively respond to high-pollution episodes.

*Recommendation 4.2:*
*The Cabinet of Ministers should:*

*(a) Ensure accreditation of all analytical laboratories under concerned ministries and agencies with responsibilities in the implementation of the Programme of Environmental Monitoring;*
*(b) Provide resources for Uzhydromet to install surface water quality and soil pollution laboratories in relevant regional offices;*
*(c) Provide resources to equip the Centre for Specialized Analytical Control on Environmental Protection under the State Committee on Ecology and Environmental Protection with portable (mobile) laboratories.*

State environmental monitoring information system

As at 2019, an integrated environmental information system interlinking the environmental databases of all public authorities operating environmental monitoring activities under the scope of the Programme of Environmental Monitoring is not available. Since 2013, CSAC under SCEEP maintains a "pollution sources monitoring database" and a password-protected online portal with data on air emissions, wastewater discharges and soil contamination. CSAC has also developed a portal (https://csak.uz/ru/) that will be used in the future to collect emissions data directly from enterprises, but this data portal has not yet been completed due to a lack of funds. While Uzbekistan is not a party to the Protocol on Pollutant Release and Transfer Registers (PRTR Protocol) to the Aarhus Convention, the development of CSAC's portal may be a good step forward towards the establishment in the future of a PRTR in Uzbekistan in line with modern international standards.

*Recommendation 4.3:*
*The Cabinet of Ministers should:*

*(a) Allocate sufficient resources to the State Committee on Ecology and Environmental Protection for the establishment of an integrated environmental information system interlinked with the environmental databases of the other public authorities operating under the Programme of Environmental Monitoring and supported by geographic information system (GIS) technologies in accordance with common formats, metadata and interoperability requirements;*
*(b) Take necessary legislative, policy and practical measures to improve management and facilitate continuous modernization and digitalization of environmental information, including state environmental monitoring information and environmental databases/cadastres, ensuring their interoperability with*

*geospatial, statistical, health and other information systems by leveraging the use of modern technologies to promote effective information collection, exchange and dissemination to the public;*

*(c) Allocate sufficient resources to the State Committee on Ecology and Environmental Protection for the finalization of the portal of the Centre for Specialized Analytical Control on Environmental Protection aimed at collecting emissions data from enterprises in support of reporting, data visualizations and the display of monitoring data to the public, and support its further development towards a future pollutant release and transfer register in Uzbekistan in line with modern international standards;*

*(d) Promote the regular participation of Uzbekistan in activities under the Protocol on Pollutant Release and Transfer Registers with a view to sharing experience and learning from international good practices;*

*(e) Consider accession to the Protocol on Pollutant Release and Transfer Registers.*

Environmental statistics and indicators

Environmental statistics collected by the State Committee on Statistics are largely not uploaded to the State Committee's website. The System of Environmental-Economic Accounting (SEEA) is not yet introduced in Uzbekistan. There is no evidence that a previously existing database of 91 environmental indicators is still in use.

As for the 46 environmental indicators under the national Sustainable Development Goals indicator framework, only nine have data available and have no methodological problems. Some national environment-related indicators have a more limited scope than the corresponding ones in the global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development. Data are currently provided online only for 10 of the 46 environmental indicators.

Although the State Committee on Statistics collects a significant amount of gender-related data, no gender and environment statistics are collected.

*Recommendation 4.4:*
*The State Committee on Statistics should:*

*(a) Make publicly available on its website the environmental statistics it collects;*

*(b) Initiate the production of accounts according to the System of Environmental-Economic Accounting (SEEA);*

*(c) Promote the development of environmental Sustainable Development Goals indicator methodologies and exchange of international experience in reporting on the environmental dimension of the Sustainable Development Goals;*

*(d) Align some of the national indicators with the global Sustainable Development Goals indicator framework;*

*(e) Increase the number of environment-related Sustainable Development Goals indicators made publicly available online;*

*(f) Initiate the collection of gender and environment statistics.*

*Recommendation 4.5:*
*The State Committee on Ecology and Environmental Protection should:*

*(a) Continue with the regular production of its set of 91 environmental indicators and produce all remaining indicators in the ECE list of environmental indicators that are relevant to the country;*

*(b) Make these publicly available on its website in line with Shared Environmental Information System (SEIS) principles of open access to environmental data.*

Environmental reporting and improved availability of information

The annual national report on the state of the environment and use of natural resources has not been produced since 2013. The last report covering the period from 2008 to 2011 was largely descriptive and did not follow the widely used D-P-S-I-R (driving forces–pressure–state–impact–response) analytical framework. Most environmental reports or bulletins produced by government agencies in charge of environmental monitoring activities are not made publicly available, impeding the implementation of Shared Environmental Information System (SEIS) principles of open access to data.

*Recommendation 4.6:*

*The State Committee on Ecology and Environmental Protection should:*

*(a) Reinitiate the regular production of the national report on the state of the environment and use of natural resources, ensuring its alignment with the international standards provided through the 2007 ECE Guidelines for the Preparation of Indicator-based Environment Assessment Reports in Eastern Europe, Caucasus and Central Asia and the Aarhus Convention, and taking into account the potential of the national report to contribute to monitoring the implementation of the environmental dimension of the Sustainable Development Goals;*

*(b) Provide online public access to the national report on the state of the environment and use of natural resources and to other reports and bulletins produced by different government agencies under the scope of the implementation of the Programme of Environmental Monitoring and as part of reporting on implementation of multilateral environmental agreements, so as to provide timely, relevant and reliable information on the state of the environment to decision makers and the public.*

Scientific and technical innovation in the field of pollution prevention and control

There is currently not enough capacity and resources for meeting applied research and technology development needs in the field of pollution prevention and control technologies, resulting in the import of such technologies. Environmental protection is not a prominent component of the Strategy for Innovative Development for the period 2019–2021. The Strategy does not define specific sectoral priorities for research and innovation and, as at June 2019, priority areas of science and technology for the development and financing of targeted state scientific and technical programmes, technology transfer and commercialization are yet to be determined as foreseen in the Strategy's roadmap.

The Scientific and Research Institute on Environment and Nature Protection Technologies under SCEEP, which has extensive experience in developing technologies for reducing industrial emissions, for waste management and for wastewater treatment, does not have enough resources for applied research in the field of pollution prevention and control technologies.

*Recommendation 4.7:*
*The Cabinet of Ministers should:*

*(a) Ensure that a sectoral assessment of priority areas for research and innovation in line with the roadmap of the Strategy for Innovative Development for the period 2019–2021 is carried out and identify resources needed for promoting applied research and technology development in the field of pollution prevention and control technologies;*

*(b) Provide the Scientific and Research Institute on Environment and Nature Protection Technologies with sufficient resources for it to further develop applied research on pollution prevention and control technologies appropriate for the territory of Uzbekistan.*

**Chapter 5: Access to information, public participation and education on the environment**

*Assessment*

Access to information and public participation

Access to information in environmental matters is at the inception stage. The ongoing governmental reforms are overwhelming for SCEEP, leaving it with limited resources to deal with processing the information and making it available to the public. Most governmental authorities do not post on their websites information and data on the state of the environment or on results of their activities related to or having an impact on the state of the environment. Furthermore, access to information on environmental matters, which is broader in scope than information on the state of the environment, is not fully covered by the national legislation. Passive access to information is more advanced than active access. The procedure for requesting information is established; however, the quality of information and timeliness of its provision remain a challenge.

Capacity for public participation in decision-making in environmental matters is practically non-existent. The Public Council established for the purpose of serving as a bridge between SCEEP and civil society does not yet fulfil this role, in the absence of information about its activities and without proactively promoting its work and engaging other representatives of the public and environmental NGOs. Furthermore, the Ecological Movement of Uzbekistan cannot replace public participation as it is envisaged by current generally accepted international practice. When necessary, mostly a small circle of NGOs working with governmental authorities is engaged in official governmental efforts to consult the public. Detailed procedures for public participation in decision-making on planned activities and projects are lacking. Except for the Ecological Movement of Uzbekistan, other environmental NGOs are not involved in the decision-making process on joining MEAs or included in the national delegations to international events.

A positive development is the opportunity provided to the public to initiate online petitions, including on environmental matters. Progress was also made in giving the public the opportunity to comment on draft laws and by-laws by posting them online. The instruments of public environmental control (except for the hearings of information provided by managers that are organized by the Ecological Movement of Uzbekistan) and public ecological expertise do not yet function in practice.

There are no examples of environmental NGOs or representatives of the public filing cases on environmental matters in the courts.

Education

Environmental education is well developed in Uzbekistan. The Concept for Environmental Education Development and its Action Plan, approved in May 2019, aim at ensuring continuous environmental education and raising the ecological culture among population.

ESD is not integrated into the education system and is not implemented in a comprehensive and continuous manner. The country adopted the Concept of Education for Sustainable Development in 2011 but it has not prompted actual changes in the education system. ESD is implemented mostly by environmental NGOs and several universities as project-based activities. Continuity of these efforts is not ensured.

The comprehensive nationalization of ESD at the legal, policy and institutional levels is not achieved. Although such nationalization requires considerable effort and resources, without ESD, achieving many goals and targets of the 2030 Agenda for Sustainable Development will be challenging for Uzbekistan.

*Conclusions and recommendations*

Access to information

While news related to environmental events and activities is posted on the websites of governmental authorities, and environmental legislation is made available on a dedicated website and on the SCEEP website, other information on environmental matters, including on the state of the environment, is not available on governmental websites to be accessed by the public. In rare cases when information on environmental matters is posted online, as in the case of the Open Data Portal, it is of limited use. Printed publications with information on the environment are disseminated primarily among governmental institutions and not made available to the public on a regular basis.

The procedure to receive and process requests from the public for information on environmental matters is established, with responsibilities assigned and deadlines set. However, a system to monitor the response process, the quality of information and timeliness of its provision is lacking.

The public at large is not sufficiently aware of what information on environmental matters is, its right to request it and the procedures to do so.

Public servants working in the environmental and other sectors with an impact on the environment lack sufficient expertise and capacity for effective provision of information on environmental matters.

*Recommendation 5.1:*
*The State Committee on Ecology and Environmental Protection and other governmental authorities should:*

*(a) Make available online all information on environmental matters in their possession, including the electronic versions of the available printed publications;*
*(b) Enhance the legal framework, procedures and practical measures to enable effective public access to information on environmental matters in line with international standards;*
*(c) Establish a system to monitor the effectiveness of procedures related to requests for information on environmental matters;*
*(d) Organize activities to raise the awareness of the public on information on environmental matters and the rights and procedures to access it;*
*(e) Organize activities to develop the capacity of civil servants at the national and subnational levels regarding the scope of information on environmental matters and procedures to make information on environmental matters effectively accessible to the public;*
*(f) Provide adequate human and financial resources to support effective access to information on environmental matters.*

*See Recommendations 3.6, 4.4, 4.5 and 4.6.*

Enabling activities of environmental NGOs

The procedures for registering and operation of NGOs, including environmental NGOs, were simplified in recent years. However, hindrances to the activities of environmental NGOs remain, such as the requirement to notify the Ministry of Justice of each planned event in the country and abroad and to seek permission to receive international funds. In the past few years, no new environmental NGOs have been registered at the national or inter-oblast levels. Only one international environmental NGO is registered in the country.

*Recommendation 5.2:*
*The Cabinet of Ministers should simplify the procedures for the operation of environmental NGOs in line with international standards.*

Public participation

The public at large is not sufficiently aware of its right to participate in decision-making on environmental matters. The 2013 Law on Environmental Control and 2018 Law on Public Control describe the forms of public control over the activities of governmental authorities and the rights and duties of NGOs in this respect. However, detailed procedures to ensure and enable effective public participation in decision-making on environmental matters are lacking. Human and financial resources to enable effective public participation are lacking.

The public is largely not consulted on planned activities and projects. There is no system to monitor if and how the public was consulted on activities and projects. Information about the public hearings, documents for the public hearings and their outcomes are not available to the public in a timely manner and on open access.

The timeframe of 16 days for making comments on draft laws and by-laws is too short to allow meaningful participation of the public and environmental NGOs. There is no transparent system in place to show whether and how comments made by the public were taken into account.

*Recommendation 5.3:*
*The Cabinet of Ministers should:*

*(a) Ensure that detailed procedures are developed and practical measures are taken to enable effective public participation in decision-making on environmental matters (on projects, activities, strategic planning and legislation) in line with international standards, and monitor their implementation;*
*(b) Ensure meaningful organization of public hearings;*
*(c) Increase the time frame for commenting on laws and by-laws, at least to 30 days and, for large and complex documents, to 60 days or more, to enable the public to organize for the submission of comments;*
*(d) Develop the capacity of civil servants at the national and subnational levels and provide adequate human*

*and financial resources to support public participation.*

*See Recommendations 2.1, 16.4.*

Access to justice

Individuals and environmental NGOs have the opportunity to file cases and appeals in the courts. However, there are no precedents of environmental NGOs or representatives of the public filing cases on environmental matters or appealing an action (or inaction) of state authorities in the courts. There is a lack of awareness among the population that it can exercise such rights. Also, the public is hesitant to seek redress through the courts. In the absence of court cases on environmental matters filed by environmental NGOs or representatives of the public, the capacity of the judicial system has not had the opportunity to develop and might not be adequate to provide effective redress.

*Recommendation 5.4:*
*The Cabinet of Ministers, through the Ministry of Justice, the General Prosecutor's Office and the State Committee on Ecology and Environmental Protection, should:*

*(a) Promote access to justice in environmental matters and raise the awareness of members of the public and environmental NGOs about their rights and opportunities as provided by the legislation in this respect;*
*(b) Develop the capacity of the judicial system (civil servants, judges, staff of the Human Rights Ombudsperson and relevant training institutions) to provide access to justice in environmental matters to members of the public and environmental NGOs.*

*See Recommendation 2.4(b).*

Aarhus Convention

Uzbekistan is not a party to the Aarhus Convention, which represents the highest international standards on access to information, public participation in decision-making and access to justice on environmental matters. The country does not fully benefit from the activities undertaken under the Convention and the experience of other countries that are parties to this treaty. The country's judicial institutions do not participate in the activities on access to justice organized in the framework of the Aarhus Convention. An in-depth assessment of the state of affairs in the area of access to information, public participation in decision-making and access to justice in environmental matters, with detailed recommendations on action needed to bring the national legislation in line with the Aarhus Convention, has never been conducted.

*Recommendation 5.5:*
*The Cabinet of Ministers should:*

*(a) Ensure the regular participation of Uzbekistan in activities under the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) with a view to sharing experience and good practice;*
*(b) Encourage the Supreme Court of Uzbekistan and other relevant bodies (Human Rights Ombudsperson, General Prosecutor's Office) to participate in activities related to access to justice under the Aarhus Convention;*
*(c) Initiate an in-depth assessment of the state of affairs in the area of access to information, public participation in decision-making and access to justice in environmental matters, with detailed recommendations on action needed in each area, with a view to bringing the national system in these areas in line with the Aarhus Convention;*
*(d) Consider accession to the Aarhus Convention.*

From environmental education to education for sustainable development

Neither SCEEP nor the three ministries in charge of education issues have a clear mandate to work on ESD. The Coordination Council on Education for Sustainable Development, established in 2011, discontinued its activities in 2014. Several activities related to ESD were carried out and materials were produced, mostly within project-

based activities undertaken by academic institutions and environmental NGOs. NUU and several environmental NGOs have accumulated significant expertise in ESD.

Legal frameworks for ESD are not in place. The Concept of Education for Sustainable Development was largely not implemented. The Programme of Actions on Environmental Protection for 2013–2017 included activities on ESD; however, most of these activities have not been put into practice. The country's participation in the activities in the framework of the ECE Strategy for ESD has not been regular.

The timely and effective implementation of the Concept for Environmental Education Development and of its Action Plan, both approved in May 2019, should contribute to the development of the environmental dimension of ESD. However, despite this positive development, there are no specific measures for introducing ESD into the system of formal, non-formal and informal education in the country.

Overall, the absence of legal, policy and institutional frameworks for ESD is an impediment to the country's progress in achieving targets 4.7 and 12.8 of the 2030 Agenda for Sustainable Development.

*Recommendation 5.6:*
*The Cabinet of Ministers should:*

*(a) Give a mandate on education for sustainable development (ESD) to the State Committee on Ecology and Environmental Protection, including promoting ESD in non-formal and informal education and in-service training;*
*(b) Give a mandate on ESD to each of the three ministries in the education sector, including for mandatory integration of ESD into the formal curricula at all levels and into teachers' education and in-service training;*
*(c) Revitalize the work of the Coordination Council on Education for Sustainable Development by revisiting its composition to include all relevant stakeholders and by ensuring its regular activities;*
*(d) Ensure the integration of ESD into the national legislation and policies and monitoring and reporting on their implementation;*
*(e) Support the work on ESD by academia and NGOs;*
*(f) Ensure regular participation by the country in activities in the framework of the ECE Strategy for ESD.*

Retraining and in-service training

In-service training of civil servants is mandatory in Uzbekistan and most governmental authorities and institutions have their own centres for in-service training. The establishment, in 2017, of the Centre for Retraining and Advanced Training of Environmental Professionals under SCEEP is a clear achievement, especially since the Centre serves the needs of interested stakeholders beyond SCEEP.

In-service training for civil servants includes environmental education to various degrees. However, neither the Centre for Retraining and Advanced Training of Environmental Professionals under SCEEP nor the centres for in-service training under other governmental institutions currently include ESD in their training activities.

*Recommendation 5.7:*
*The State Committee on Ecology and Environmental Protection should:*

*(a) Mandate its Centre for Retraining and Advanced Training of Environmental Professionals to integrate ESD into its training activities;*
*(b) Promote the integration of environmental education and ESD into the training activities of in-service training centres under other governmental authorities.*

## Chapter 6: Implementation of international agreements and commitments

*Assessment*

There are many examples of the rapid pace with which Uzbekistan is moving forward towards a more prominent role on the international scene. Uzbekistan has demonstrated its strong will to contribute to enhanced regional

cooperation in Central Asia. The country has changed its position on water–energy issues.

Uzbekistan is not a party to a number of relevant global and regional MEAs. In the period 2010–2017, the country has not joined any additional MEAs. At the same time, in the past two years, the country became party to three additional MEAs – the Paris Agreement (in 2018), the Stockholm Convention (in 2019) and the Cartagena Protocol (in 2019).

This new trend is likely to remain in the coming years due to the aspiration of the country to further strengthen its place and role as a full subject of international relations and strengthen its international reputation. There are quite intensive ongoing efforts within the country in preparation of its accession to some agreements.

MEA implementation remains a problem very much related to insufficient administrative capacity, significant gaps in critical information (e.g. for the management of biodiversity) and deficiencies in coordination among institutions.

The country is going through a period of great growth in terms of international cooperation and very likely will have to set up a mechanism that ensures comprehensive and systematic donor coordination in support of Government activities, including on environment-related issues.

*Conclusions and recommendations*

Institutional aspects of international cooperation on the environment

There are no effective systemic coordination mechanisms on environment-related issues that are the subject of international, regional or bilateral cooperation. The role and functions of MEA national focal points are not understood or fully exercised. There are gaps in information sharing. The transition costs of the focal points are very high because there are neither mechanisms nor practices to ensure the adequate transfer of knowledge from outgoing focal points to new focal points. In many cases, information on the national focal points of Uzbekistan held by the convention secretariats is outdated.

*Recommendation 6.1:*
*The Cabinet of Ministers should ensure that:*

*(a) Regular and efficient mechanisms for coordination on environment-related issues that are subject of international, regional or bilateral cooperation are in place;*
*(b) The Ministry of Foreign Affairs has an updated and publicly available database of all focal points of international agreements, in particular, environment-related ones, and relevant authorities display information on focal points of their websites;*
*(c) Focal points comply with their duties of sharing information and preparing and disseminating meeting reports and that they are properly prepared for performing the functions of focal points;*
*(d) Information available at the convention secretariats in relation to focal points is always up to date;*
*(e) Technical capacities to implement and report on multilateral environmental agreements are strengthened.*

Participation in agreements to which Uzbekistan is not a party

There are many relevant MEAs to which Uzbekistan is not a party, including those mentioned below. However, there are clear benefits in joining these instruments, as long as compliance with their obligations is feasible for the country. In this respect, it is commendable that Uzbekistan always does a feasibility study before deciding to join an MEA and works towards enhancing implementation capacities.

Uzbekistan expressed its interest in initiating comprehensive legislative reforms with a view to aligning its environmental assessment system with the provisions of the Espoo Convention and the Protocol on SEA. Taking into account the high pace of economic and infrastructural developments in the country, application of modern EIA and SEA procedures will significantly contribute to the prevention, reduction and control of significant adverse environmental impacts in the country and in the Central Asia subregion.

The preparatory work for accession to CLRTAP and EMEP is advanced and the country has been closely engaged

in the activities undertaken within the Convention. Notably, Uzbekistan strengthened its capacity to prepare emission inventories. Accession to the EMEP Protocol would provide a good basis for rapid accession to the other key protocols of the Convention. This would also give further access to the expert network under the Convention, which can provide guidance on ELVs based on BAT.

Uzbekistan does not have a comprehensive legal framework for chemicals, so there are benefits to the country's adherence to international regimes in this area. Following accession to the Stockholm Convention in 2019, accession to the Rotterdam Convention and Minamata Convention on Mercury would be logical next steps.

The accession process to become a party to the Protocol on Water and Health is ongoing. The Protocol sets the international framework providing support to countries in the implementation of health-relevant water safety measures.

*Recommendation 6.2:*
*The Cabinet of Ministers should consider accession to the:*

*(a) 1991 Convention on Environmental Impact Assessment in a Transboundary Context;*
*(b) 2003 Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context;*
*(c) 1979 Convention on Long Range Transboundary Air Pollution, the 1984 EMEP Protocol under the Convention and, subsequently, the three amended protocols to the Convention: the 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone amended in 2012, the 1998 Protocol on Heavy Metals amended in 2012 and the 1998 Protocol on Persistent Organic Pollutants amended in 2009;*
*(d) 1998 Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade;*
*(e) 2013 Minamata Convention on Mercury;*
*(f) 1999 Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.*

*See Recommendations 4.3, 5.5, 12.6, 13.4, 14.5, 15.5.*

### Reporting

The country has had difficulties fulfilling its reporting obligations under several MEAs, such as the Convention on Wetlands of International Importance, especially as Waterfowl Habitat, Agreement on the Conservation of African-Eurasian Migratory Waterbirds, Convention on International Trade in Endangered Species of Wild Fauna and Flora and Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

*Recommendation 6.3:*
*The Cabinet of Ministers should ensure regular fulfilment by Uzbekistan of its reporting obligations under all multilateral environmental agreements the country participates in.*

### Subregional cooperation on transboundary waters

The existing subregional legal and institutional framework on the management of transboundary waters in place in Central Asia is not adjusted to the challenges that have arisen over the last 30 years. The efficiency problems in the functioning of IFAS persist, despite having been identified and recognized by the member countries. Although the 2009 Joint Statement of the Heads of State of IFAS founders included a commitment to strengthen the legal and institutional framework of the organization, changes have not been implemented in practice.

The new position of Uzbekistan towards more open dialogue on transboundary water issues provides an opportunity for the country to boost the activities of IFAS towards more virtuous cooperation, with more expressive results and a more robust legal framework. In the short run, Uzbekistan could play an important role in initiating the reassessment of the legal and institutional frameworks of cooperation and in bringing Kyrgyzstan back into IFAS cooperation. In the long run, it could facilitate the involvement of the energy sector in the cooperation and the extension of cooperation to water quality issues.

*Recommendation 6.4:*
*The Cabinet of Ministers should ensure the active role of Uzbekistan in facilitating the strengthening of the legal and institutional frameworks of the International Fund for Saving the Aral Sea.*

Subregional cooperation on the environment

Uzbekistan's role as Chair of the ICSD (starting in October 2019) provides opportunities for the country to increase its contribution to and play a leading role in the environmental cooperation agenda in the Central Asia subregion. In October 2019, the ICSD adopted the Regional Environmental Programme for Sustainable Development in Central Asia that is pending the approval of the IFAS Board. The document is to be implemented in the period 2020–2030 and is centred around the environment-related Sustainable Development Goals.

*Recommendation 6.5:*
*The State Committee on Ecology and Environmental Protection should facilitate timely approval of the Regional Environmental Programme for Sustainable Development in Central Asia, its implementation and monitoring.*

Multi-Partner Human Security Trust Fund for the Aral Sea Region

The Multi-Partner Human Security Trust Fund for the Aral Sea Region is an emblematic initiative of Uzbekistan to streamline donor assistance and strengthen the efforts of the Government and the international community to address the consequences of the Aral Sea disaster. The initiative currently enjoys considerable support from the Government. Continuation of such support, together with efficient functioning and transparency in the operation of the Trust Fund, are prerequisites for maintaining credibility and attracting high levels of interest from the international and donor community.

*Recommendation 6.6:*
*The Cabinet of Ministers should continue to support the Multi-Partner Human Security Trust Fund for the Aral Sea Region, in particular by:*

*(a) Ensuring timely and efficient implementation and monitoring of activities and public availability of related reports;*
*(b) Increasing advocacy activities to reach out to potential donors;*
*(c) Continuing its own contributions to replenish the Trust Fund.*

## Chapter 7: Climate change

*Assessment*

Uzbekistan is a party to the UNFCCC, the Kyoto Protocol and, since November 2018, the Paris Agreement. While the country fulfils its reporting obligations and has submitted three national communications under the UNFCCC, the newest data on GHG emissions available in 2019 are from 2012.

In comparison with 1990, the first inventoried year, by 2012, there has been a 13.7 per cent increase in overall emissions and a 21.6 per cent decrease in emissions per capita. The country submitted its (I)NDC in 2017, which stipulates a carbon intensity target (to decrease the specific emissions of GHGs per unit of GDP by 10 per cent by 2030 compared with 2010). However, the economy's carbon intensity remains high.

The country is expected to face increasing temperatures, decreasing water resources and an increase in the frequency of extreme weather events as a consequence of climate change. The decrease in water resources is expected to have serious consequences in a country already struggling with water scarcity. Despite the expected economic impacts, the country has not yet estimated the costs of inaction for the different sectors, in particular for agriculture.

Uzbekistan does not have legislation to specifically address climate change and is also lacking an overall strategic document on the issue. While climate change issues have, to a certain extent, been incorporated into sectoral legislation and major strategic documents, the absence of an integrated legislative and policy framework, as well

as the absence of a coordination mechanism, can be seen as obstacles in the country's efforts to tackle the serious challenges posed by climate change.

The effects of climate change are expected to exacerbate the serious consequences of the Aral Sea disaster on the local population. The most important initiative currently undertaken in the Aral Sea region is the massive afforestation in the dried bed of the Aral Sea. These campaigns have the potential to positively contribute to the mitigation efforts.

*Conclusions and recommendations*

Establishing a strong legal and policy framework

Climate change concerns are being mainstreamed in sectoral legislation and strategic documents. At the same time, there is no evidence of sector-wide specific adaptation measures being implemented in industry, while mitigation measures in industry focus on fuel and energy saving. There is also no evidence of specific adaptation or mitigation measures being implemented in the tourism sector, and the country still has to thouroughly assess the impacts of climate change on tourism, in particular on sites of cultural and historical significance and natural sites.

Despite the fact that climate change concerns are being mainstreamed in sectoral legislation and strategic documents, the country lacks a comprehensive law on climate change and an overall long-term strategy on climate change action. In 2019, the country endorsed the national Strategy for Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030 in the Republic of Uzbekistan but local disaster risk reduction strategies are lacking. Developing the legal and policy frameworks and mainstreaming climate change issues and disaster risk reduction, also at the local level, would support Uzbekistan in the implementation of targets 11.b, 13.1 and 13.2 of the 2030 Agenda for Sustainable Development.

*Recommendation 7.1:*
*The Cabinet of Ministers should:*

*(a) Ensure development and adoption of a law on climate action and an overall long-term strategy on climate change adaptation and mitigation;*
*(b) Ensure the development of local disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030;*
*(c) Ensure that local climate change adaptation and mitigation measures are integrated into local development plans and programmes.*

Strengthening the institutional framework

While sectoral authorities are active in implementing mitigation and adaptation measures, there is no institution with a clear mandate to steer climate change action at the national level. The lack of a coordination mechanism is a hindering factor for climate action. Additionally, sectoral authorities often have limited human capacity when it comes to climate change issues, and while there seems to be a general awareness of climate change as an issue, sectoral ministries often have a limited awareness of the implications from climate change for the sectors under their responsibility.

*Recommendation 7.2:*
*The Cabinet of Ministers should:*

*(a) Strengthen human capacities of the authorities most relevant for climate change mitigation and adaptation by establishing climate change units with a clear mandate for mainstreaming climate change in the relevant sector;*
*(b) Establish a mechanism that can ensure the coordination of climate-change-related measures at the national level.*

GHG inventory preparation

The process of preparing a GHG inventory is not a regular activity, which is an impediment for effective development of climate change policies and implementation of mitigation and adaptation measures in the country. In order to ensure regular process of GHG inventory preparation in line with current requirements under the UNFCCC, additional financing for this process is needed through the provision of state budgetary resources. The existing GHG inventory does not include data on $SF_6$ and PCFs.

Uzbekistan does not have an emissions trading scheme.

*Recommendation 7.3:*
*The Cabinet of Ministers should:*

*(a) Ensure a continuous process of preparation of the GHG inventory, including through its additional financing from the state budget;*
*(b) Provide that the new inventory to be prepared in 2020–2021 also includes data on sulfur hexafluoride ($SF_6$) and perfluorocarbons (PCFs) and data on emissions related to waste incineration;*
*(c) Consider establishing an emissions trading scheme.*

Awareness-raising

Despite improvements on climate change awareness, the overall level of awareness on climate change in the country remains limited. Climate change issues have started being integrated into the curricula of secondary school education but are not yet integrated into the curricula of primary education, vocational training and higher education, as foreseen under target 13.3 of Sustainable Development Goal 13. Most awareness-raising activities are implemented in the framework of donor-financed projects.

*Recommendation 7.4:*
*The Cabinet of Ministers should ensure:*

*(a) Regular and systematic implementation of measures aimed at raising awareness on climate-change-related issues;*
*(b) That climate-change-related topics are integrated into the curricula in primary, secondary and higher education and vocational training.*

Impacts on biodiversity

Some negative impacts of climate change on forests and biodiversity are already observed. There has been a decrease in floodplain and riparian forest habitats, due to changes in hydrological phenomena. The negative impacts of climate change are expected to be especially felt by tugai forests, as changes in climate conditions and precipitation patterns might negatively affect their habitats.

The most important measures relevant to climate change currently implemented in the forestry sector are the massive afforestation campaigns in the dried bed of the Aral Sea. These forest plantations are expected to be essential in mitigating dust storms and can provide much-needed economic opportunities for the impoverished communities that once relied on fishing.

*Recommendation 7.5:*
*The Cabinet of Ministers should:*

*(a) Address the issue of the decrease in floodplain and riparian forest habitats due to changes in hydrological phenomena;*
*(b) Address the issue of the negative impacts of climate change on tugai forests;*
*(c) Promote the diversification of the planted species in the Aral Sea region, to mitigate the effects of climate change and also to stimulate economic co-benefits for the local communities.*

Energy sector

Climate change is expected to result in an increase in energy demand. In particular, a significant increase in demand is expected for energy for cooling purposes. Climate change is also expected to have an influence on hydropower productivity. At the same time, the country has a significant technical potential for solar energy development.

*Recommendation 7.6:*
*The Cabinet of Ministers should:*

*(a) Promote actions to decrease the energy demand for cooling purposes;*
*(b) Promote the full exploitation of the solar energy potential, also in line with the targets set in the country's nationally determined contribution (NDC);*
*(c) Address the negative influences of climate change on the productivity of the hydropower sector as a result of changes in water availability.*

**Chapter 8: Air protection**

*Assessment*

Uzbekistan has a large agricultural production, but also mining, oil exploration and industrial activities. The steady economic growth in the last decade and the rapid growth of traffic in the cities necessitate serious management of the air pollution and other environmental problems in the country.

The industrial air emissions, which are relatively high for such components as $SO_2$, hydrocarbons and dust, combined with the air-polluting emissions by the growing number of vehicles and the emissions (mainly in rural areas) from domestic heating with firewood and other solid fuels, create severe air pollution in industrial and urban areas, which causes serious nuisance and health problems.

State-of-the-art technical measures to prevent air emissions from industry, such as those described by the Task Force on Techno-Economic Issues of CLRTAP or in EU Best Available Techniques Reference Documents (EU BREFs), are at this moment not prescribed in permits and not applied in Uzbekistan.

*Conclusions and recommendations*

Air quality standards

Uzbekistan uses MAC levels of pollutants as the normative units for air quality. Air quality standards are based on short-term maximum and daily, monthly and annual mean values, but to evaluate the state of air pollution, specific indexes are used that relate indirectly to the MAC values. Indexes can be used as indicative instruments and for comparison of cities but, in practice, the use of indexes is not a method that gives a clear picture of the real air quality to enable evaluation of human health risks, as can be achieved by applying standards from international practice in terms of concentrations.

*Recommendation 8.1:*
*The State Committee on Ecology and Environmental Protection, together with the Ministry of Health, should draw up a roadmap to transfer the current air quality assessment to air quality standards based on mean pollutant concentrations according to the internationally accepted practices.*

Air monitoring

Uzbekistan has a comprehensive air emission monitoring network with 63 fixed posts and measurement of 13 different substances, but developments in the monitoring of some harmful pollutants such as fine dust ($PM_{10}$ and $PM_{2.5}$) by automatic equipment are slow. This prevents Uzbekistan from gathering necessary data for global indicators 3.9.1 (Mortality rate attributed to household and ambient air pollution) and 11.6.2 (Annual mean levels of fine particulate matter (e.g. $PM_{10}$ and $PM_{2.5}$) in cities (population weighted)) of the 2030 Agenda for Sustainable Development. Furthermore, it prevents Uzbekistan from developing adequate measures to address

air pollution, especially in the cities and urban centres, in line with target 11.6 of the 2030 Agenda for Sustainable Development. Uzbekistan has established its own national indicator 3.9.1, which is not related to household and ambient air pollution.

*Recommendation 8.2:*
*The Cabinet of Ministers should:*

*(a) Ensure that the number of parameters measured is increased with $PM_{10}$ and $PM_{2.5}$ for all measuring posts in vulnerable areas, such as cities and near industrial complexes;*
*(b) Ensure the introduction of legally-binding national standards and limit values for $PM_{10}$ and $PM_{2.5}$;*
*(c) When sufficient data about the concentrations of fine particulate matter have been collected, initiate the adoption by Uzbekistan of the Sustainable Development Goals global indicator 3.9.1 and ensure that information on the mortality rate attributed to household and ambient air pollution is available to decision-makers and the public.*

Best available techniques

Uzbekistan does not have a specific national policy document for the protection of ambient air. The strategy for air quality and air protection management can be derived from other strategic documents such as the Programme of Actions on Environmental Protection for the period 2013–2017. Many actions were envisaged in the Programme, among which is the gradual strengthening of ELVs for air emissions by implementing modern abatement techniques.

Nevertheless, emissions of $SO_2$, $NO_x$ and dust by electric power plants, oil and gas refineries and other industries are still relatively high, compared with international standards. Much (sulfur-containing) waste gas from oil and gas production is still flared.
BAT to abate air pollutant emissions as described in guidance documents developed under CLRTAP or the EU Industrial Emissions Directive are not applied in Uzbekistan. The application of BAT is not promoted by Uzbek authorities. Emission reduction plans for air-polluting industrial sectors are not developed.

In this regard, documents produced by CLRTAP's Task Force on Techno-Economic Issues can serve as tools for setting the ELVs based on BAT, as they are specifically developed for countries with transition economies. Use of EU BREFs that have more stringent BAT-based ELVs can be the next step.

*Recommendation 8.3:*
*The State Committee on Ecology and Environmental Protection should promote the application of internationally accepted best available techniques to abate air pollution from industrial sources and seek expertise under the Convention on Long-Range Transboundary Air Pollution for this purpose.*

Air pollution from the residential sector

Air pollution from the residential sector is an important factor for Uzbekistan's progress in achieving the global and national target 11.6 of the 2030 Agenda for Sustainable Development. Domestic heating is a big source of air pollution in cities in winter. Poor maintenance of district heating installations and the lack of insulation of buildings leads to low energy-efficiency performance. Energy efficiency of houses in Uzbekistan is three times lower than in Western European countries. The use of firewood, coal and other heat sources in individual stoves and furnaces with low emission heights contributes to bad air quality by the emission of fine particulates. The emissions from stoves and furnaces lead to exceedance of air quality standards (dust, $SO_2$) in winter.
*Recommendation 8.4:*
*The Cabinet of Ministers should:*

*(a) Stimulate the implementation of measures for energy efficiency in residential buildings, e.g. by enhancing the attractiveness of energy-efficiency measures by guaranteeing a reasonable pay-back period of costs and setting conditions for better technical maintenance of district heating systems;*
*(b) Promote the use of low-carbon technology (heat pumps, renewables) and cleaner fuels such as natural gas instead of liquid and solid fuels for individual households;*
*(c) Promote the use of individual heat-use monitoring devices in apartment buildings.*

## Chapter 9: Water management

*Assessment*

Since 2010, Uzbekistan has made progress in many areas of water management, in particular in the area of investment in new capital infrastructure to increase access to drinking water and sanitation and for refurbishment of irrigation infrastructure to reduce water losses. In parallel with this investment, significant reform is ongoing to improve water-use efficiency and the productivity of agriculture, with water being increasingly diverted to higher value crops, along with efforts towards the installation of efficient irrigation equipment and adoption of effective practices.

Reorganization of line ministries, including the formation of the Ministry of Water Management and the Ministry of Housing and Communal Utilities in 2017–2018, has recently been completed in an attempt to add focus to the key issues of water resources management and water supply and sanitation. The need to move towards the principles of IWRM remains, in particular towards greater stakeholder involvement in policymaking and decision-making, despite some progress in this area.

Concerns remain about the impact of industrial discharges to the sewerage network or the environment, disparity in access to and the performance of rural water supply and sanitation systems, and general water availability and long-term sustainability. Underpinning these long-term concerns is the fact that water management remains fragmented, with many actors involved.

Access to adequate and affordable water supply and sanitation services in line with Sustainable Development Goal 6 remains a concern. While work is being done to improve access, quality of service remains an issue.

*Conclusions and recommendations*

Cross-sector coordination and integrated water resources management

Policy coherence, cross-ministerial dialogue and IWRM are considered key to the progression of Uzbekistan's water management ambitions. Concerns over long-term future water supply and demand, land use and the role of water in supporting policies for economic growth expose water allocation and water security issues.

A cross-ministerial policy dialogue, also involving the private sector, academia, civil society and development partners, has the potential to address some of the policy coherence concerns outlined above. ECE and the OECD have experience in facilitating these platforms in Eastern Europe, the Caucasus and Central Asia. Key outcomes of the national policy dialogues on IWRM typically take the form of evidence-based policy packages oriented towards practical implementation.

A national policy dialogue on IWRM in Uzbekistan could facilitate broad consultations and deliver analysis to support the Government's objectives and strategic direction for the water sector. It would establish the evidence base to support strategy and policy decisions and provide a platform for consultation on issues ahead of presentation to the Government. Tackling the coordination of data management would be key to supporting this overall objective.

*Recommendation 9.1:*
*The Cabinet of Ministers should improve policy coherence, cross-sectoral cooperation and coordination with the wider water community by:*

*(a) Improving the cross-sectoral collection, sharing and use of data;*
*(b) Developing a roadmap of key strategic objectives for the water sector as a whole, to allow focus of action;*
*(c) Considering the establishment of a national policy dialogue on integrated water resources management.*

Capital infrastructure investments to tackle regional disparities and increase water-use efficiency

There are disparities in access to and quality of water supply and sanitation services in Uzbekistan. This is true among different oblasts and also between urban and rural areas. A range of investments has been delivered to bridge this disparity, including the recent Programme for Integrated Development and Modernization of Drinking Water Supply and Sewerage Systems for the period 2017–2021 to ensure provision of centralized drinking water to apartments and households. Investments of this type make a real difference to the day-to-day lives of citizens, improve public health and productivity and contribute directly to Uzbekistan's commitments under the Sustainable Development Goals, in particular Goal 6. However, at present, sanitation services do not keep pace with the provision of drinking water supply. Addressing provision of these vital services at the planning stage is key to preventing the deferral of problems to a future development stage, when retrofitting of utility services may be difficult. As the cost of developing drinking water and sewerage networks and water and wastewater treatment plants is reported as a concern, opportunities exist to revisit existing national design and construction standards (former SNiPs) for water supply and sanitation facilities to ensure appropriate plant is developed at the appropriate time.

A range of investment opportunities also exists to increase water-use efficiency. Whether for the lining of canals, updating of irrigation infrastructure with technologies such as drip irrigation or improving of drainage facilities, these investments are to be developed in areas where the maximum impact can be realized. Monitoring impact after investments have been delivered would also help focus future plans.

*Recommendation 9.2:*
*The Cabinet of Ministers should continue progress in infrastructure development by:*

*(a) Identifying priority communities and settlements to target for expansion of sustainable water supply and sanitation infrastructure;*
*(b) Initiating the review of national design and construction standards for water supply and sanitation facilities in rural areas, to reduce capital and operational costs and make infrastructure more affordable;*
*(c) Identifying priority investments that could be made to refurbish existing irrigation infrastructure and improve collector-drainage systems, with a focus on investments that would make a step change in efficient water management, reduce land salinity and increase agricultural productivity;*
*(d) Designing appropriate financing mechanisms to support these investment programmes and human and technical capacities to support the investments.*

*See Recommendations 13.2 and 17.4.*

Water efficiency and conservation

A range of activities is ongoing in Uzbekistan to consider efficient irrigation practices and increase agricultural productivity. This has focused on efficient irrigation technologies, including the roll-out of drip irrigation where appropriate, moving to shorter furrows and alternate watering of furrows, and also changing crop type, to reduce the production of cotton and replace it with higher value crops, including orchards and vineyards. In urban areas, industrial water users have the opportunity to embrace efficient manufacturing and processing operations and look for opportunities for effluent recycling and treatment before release to the environment. There are also opportunities to tackle water consumption in the growing residential population. However, the linkages between land use planning and water management are not sufficiently present in the current policy framework to ensure that water quantity and quality considerations are duly taken into account in the development of new agricultural, municipal and industrial projects.

*Recommendation 9.3:*
*The Cabinet of Ministers should continue its efforts to drive efficient use of water in all sectors of the economy and by all water users by:*

*(a) Developing policies and strategies to support water efficiency, including metering schemes to monitor consumption and financial incentives for purchasing water-efficient technologies and investment in the human capacity and awareness campaigns to support effective roll-out;*
*(b) Embedding water-efficient principles in land use planning to ensure that best practice in this area is adopted from the start of new municipal, industrial or agricultural developments;*

*(c) Ensuring that agricultural policies and strategies are coordinated with water management objectives so that the necessary crop mix, irrigation technology and practice and required water volume are aligned.*

## Chapter 10: WASTE AND CHEMICALS MANAGEMENT

*Assessment*

Municipal waste management is undergoing a transformation aimed at expanding collection service to the whole population of Uzbekistan and ensuring an increase in recycled and safely disposed of waste. Recent positive developments include the increase in coverage of the population by waste services and operationalizing of the first waste sorting plant in the country. The transformation is supported by the Strategy on Municipal Solid Waste Management for the period 2019–2028, which sets well-defined goals until 2029. However, it will be difficult to assess whether the goals will be achieved, as data on waste are estimated and incomplete.

Information on waste types and amounts is not detailed and structured and does not support current reforms. Waste management is based on calculated and administratively agreed waste norms and not actual data obtained from weighing waste at disposal or recycling sites.

The Law on Waste and implementing legislation is complex and represents a mix of the old approach, when waste management was regulated by the Ministry of Health, and the new approach, with waste management regulated by SCEEP. The implementation (provision of waste services) and enforcement (monitoring and inspection) functions are often assigned to the same public authority.

Industrial waste management is on a higher level than municipal waste management, although much less waste is monitored, due to the outdated system of four toxicity classes of waste. This system does not allow identification of the nature of industrial waste and resulting environmental impact (beyond health impacts). Although waste management plans are required by the legislation, they do not seem to have an impact on improvement of waste management.

Financing of waste management is not incorporated to a full extent in the budgets of state-owned services (health care) and state-owned enterprises. Also, in the municipal waste management sector, waste fees are insufficient for sustainable provision of waste collection and disposal. Such a situation leads to underestimation of waste management costs.

Uzbekistan does not possess the expertise and financial resources to deal with the impacts of waste generated in the past. While the country cooperates well with international organizations in managing the legacy of radioactive waste, such cooperation for the management of obsolete pesticides and other POPs is not sufficient. Greater involvement of foreign donors in municipal and industrial waste management could lead to faster and more effective transformation of waste management to international standards.

*Conclusions and recommendations*

Waste legislation

The waste legislation is undergoing a change from the traditional approach led by the Ministry of Health, which emphasized hygiene aspects, towards a modern approach oriented towards broader environmental aspects of waste management. The adoption of the 2019 Strategy on Municipal Solid Waste Management for the period 2019–2028 and including private companies as providers of waste services creates new challenges in the legislative area. The 2002 Law on Waste, although recently amended, does not comply with the needs of the new system of waste management. As at 2019, the Law on Waste is weak in defining permits for the operation of waste facilities, providing waste services and transboundary movement of waste. Inspection of waste management is limited if these permits are absent as such.

*Recommendation 10.1:*
*The State Committee on Ecology and Environmental Protection should develop a new law on waste in accordance with the best international practice and in line with the Strategy on Municipal Solid Waste Management for the*

*period 2019–2028 and ensure that the law includes well-defined site-specific permits regulating waste management activities.*

Waste management reform

Municipal waste management in Uzbekistan is starting a transformation, moving towards a modern, centralized system based on nationwide planning. The emphasis is on controlled disposal, recycling and monitoring of the impact of waste. The implementation of actions defined in the Strategy on Municipal Solid Waste Management for the period 2019–2028 would support the achievement of target 12.5 of the 2030 Agenda for Sustainable Development, achieve financial sustainability of the waste sector and encourage the industrial sector to strengthen its efforts on industrial waste recycling.

*Recommendation 10.2:*
*The State Committee on Ecology and Environmental Protection should:*

*(a) Establish a nationwide system of municipal waste collection and disposal in line with the Strategy on Municipal Solid Waste Management for the period 2019–2028;*
*(b) Elaborate a priority list for the modernization of controlled landfills.*

Waste classification

Industrial waste management is not yet fully regulated at the national level, except for radioactive waste hotspots. The main drawback is the use of waste classification based on four hazard classes, which is not compatible with international practice, therefore hindering the assessment of progress towards achieving target 12.4 of the 2030 Agenda for Sustainable Development. Uzbekistan does not have comparable data to produce the global indicator 12.4.2 (Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment). The use of waste classification based on hazard/toxicity classes does not conform with international practice and does not support waste recycling and proper disposal.

*Recommendation 10.3:*
*The State Committee on Ecology and Environmental Protection, in cooperation with the State Committee on Statistics, should consider introducing a waste classification system based on chemical-physical characteristics and abandon the system of four hazard classes, so that to ensure compatibility of data to produce the global Sustainable Development Goals indicator 12.4.2 and support waste recycling and proper disposal.*

Waste data

Waste data in Uzbekistan are based on calculation using per capita or per ton of product values. This approach rarely results in reliable data. The development of new transfer stations and disposal sites is an excellent opportunity to start using data from weighbridges for national waste reports.

*Recommendation 10.4:*
*The State Committee on Ecology and Environmental Protection should start the transition from calculated waste data to waste data from weighbridges in the preparation of national statistics and reports.*

Landfills

All disposal sites used in Uzbekistan are in urgent need of modernization and they are not achieving standards of controlled waste disposal. Although the investments in municipal waste infrastructure planned under the Strategy on Municipal Solid Waste Management for the period 2019–2028 include the development of controlled landfills, the standards for development and operation of disposal sites are outdated or lacking.

*Recommendation 10.5:*
*The State Committee on Ecology and Environmental Protection should continue to prepare the standards for siting, construction, operation, closure and monitoring of waste disposal sites in line with international practice.*

Obsolete pesticides

Information on the situation in management of obsolete pesticides is not openly available. This does not allow access to international expertise and funding to eliminate risks of obsolete pesticides to the environment and people. Also, information on the use of PCBs and PCB-containing equipment is non-existent and thus it is not possible to assess the impact of these POPs on the environment.

*Recommendation 10.6:*
*The Cabinet of Ministers should reconsider its position on obsolete pesticides and task the State Committee on Ecology and Environmental Protection to engage in international cooperation in POPs management.*

*Recommendation 10.7:*
*The State Committee on Ecology and Environmental Protection should investigate the use of PCBs and PCB-containing equipment in the industrial sectors and prepare a plan for the elimination of PCBs and their safe disposal.*

Medical waste

The management of medical waste is underdeveloped, and hospitals and other health-care facilities are managing waste on their own. There is no regional approach to the provision of specialized waste service for health-care facilities.

*Recommendation 10.8:*
*The State Committee on Ecology and Environmental Protection, in cooperation with the Ministry of Health, should:*

*(a) Prepare a national strategy for management of medical waste that would focus on the regional approach to treatment and disposal of medical waste;*
*(b) Consider establishing a state-owned enterprise specialized in medical waste management.*

Chemicals management

Chemicals management is not included as part of environmental policy. The last chemical profile of Uzbekistan was prepared in 2012 and the information presented therein may be outdated. Emergencies and accidents involving chemicals are managed together with all technogenic emergencies and accidents.

*Recommendation 10.9:*
*The State Committee on Industrial Safety should:*

*(a) Consider preparing a Chemical Profile of Uzbekistan, using the latest data;*
*(b) Include chemical management as a separate category of risk management in industry;*
*(c) Provide training focused on safe management of chemicals.*

## Chapter 11: BIODIVERSITY AND PROTECTED AREAS

*Assessment*

Uzbekistan successfully preserved the abundance of wild native species of flora and fauna, including 16 plant and 46 fauna species categorized by the IUCN as globally threatened by extinction, as well as numerous regionally rare and endangered species, inscribed in the national Red Book. The populations of widespread wild animal species are either stable or growing in numbers, as hunting for the majority of game species is kept at a sustainable level. However, decreasing trends in populations of several globally threatened or locally endemic fauna species are observed.

All natural ecosystems in Uzbekistan (where deserts and steppe ecosystems encompass 85 per cent of the country's territory) are exposed to, and seriously threatened by, the global climate changes, further exacerbating desertification, habitat degradation, increased threat of steppe and forest fires, increasing salinization of water and scarcity of water resources. The most striking example of the degradation of natural ecosystems, habitats and

species diversity is the environmental disaster in the Aral Sea region. However, numerous other pressures continue to threaten the viability of ecosystems and species populations, in particular the land uptake for mining and agricultural purposes and the unsustainable use of pastures (also in mountain forest ecosystems).

In order to mitigate the adverse effects of such pressures and prevent further biodiversity loss and land degradation, Uzbekistan implements extensive and costly protective and restorative measures, in particular the afforestation of the dried bed of the Aral Sea, restoration of aquatic and wetland ecosystems in the Amu Darya River delta, establishment of rare and threatened species breeding centres and designation of new PAs.

However, the development and implementation of state policies on biodiversity conservation is seriously hampered by the unavailability of reliable data. An integrated biodiversity monitoring system is not in place. The monitoring of key Red Book species is carried out only in some PAs, while sporadic field inventories of flora and fauna species populations have so far been conducted only in some administrative regions of the country.

As at 1 January 2019, the PA system (excepting areas of the national category VI) encompassed 13.2 million ha, which equals 29.4 per cent of the country's territory. However, the state forest fund lands (less than 29 per cent of which are covered by actual forests) constituted the predominant part (over 84 per cent) of the above. Typical PAs together covered less than 2.1 million ha, only 4.63 per cent of the country's territory, while the most effective protection of biological and landscape diversity was ensured only in PAs granted legal entity status, the total area of which accounted for less than 1.5 million ha – less than 11 per cent of the total PA system or only 3.31 per cent of the country's territory.

*Conclusions and recommendations*

Biodiversity monitoring and research

The availability of reliable, comprehensive and up-to-date information on biodiversity is a prerequisite for the proper formulation of national policies, ecosystem and species conservation action plans and PA management plans, as well as for the proper setting of hunting quotas. As at 2019, an integrated biodiversity monitoring system is not operational in Uzbekistan and no forest inventory has been conducted since 1987, while the 2009 national Red Book, which should indicate the most urgent priorities for species conservation, is outdated and incompatible with the IUCN global assessment methodology and criteria.

Moreover, the integrated biodiversity monitoring system, once in operation, will not be able to perform its planned policy support tool functions unless it is continuously provided with good quality and continuously updated information derived from biodiversity monitoring, field inventory works and scientific research. The lack of access to reliable and updated information on biodiversity is an impediment for progress in achieving the Sustainable Development Goals targets 15.1, 15.2 and 15.5. The continuity of long-term research on wild species of flora and fauna (in particular rare and threatened species) is the prerequisite for the successful implementation by the parties of CBD Article 7.

*Recommendation 11.1:*
*The Cabinet of Ministers should:*

*(a)* *Based on a proposal from the State Committee on Ecology and Environmental Protection, adopt the revised and updated Red List of rare and endangered flora, fungi and fauna species, paying due account to the globally applied IUCN methodology and criteria, and ensure the publication of the next edition of the Red Book;*

*(b)* *Based on a proposal from the State Committee on Ecology and Environmental Protection, adopt the list of priority biodiversity monitoring and research programme topics, with a special focus on both rare and threatened, and locally endemic flora, fungi and fauna species, plant communities and ecosystems, game species and invasive alien species;*

*(c)* *Adopt and ensure the implementation of a long-term state biodiversity monitoring and research programme, as part of the integrated system of state environmental monitoring, in cooperation with the Academy of Sciences, other relevant public academic and scientific research institutions and environmental NGOs;*

*(d) Mobilize adequate resources to ensure the continuation of state support for biodiversity monitoring and research in the long run;*
*(e) Support the State Committee on Forestry and mobilize adequate resources for carrying out the national forest inventory and long-term systematic research on forest ecosystems and habitats;*
*(f) Ensure the establishment and operation of an efficient biodiversity information system, utilizing contemporary techniques for digitalized data acquisition, storage, retrieval, processing and dataset harmonization, with the objective to gather, store and share results of biodiversity monitoring, research programmes and projects carried out with the support of public funding, and provide access to this system (with differentiated access and data administration levels) for all stakeholders involved in biodiversity conservation initiatives.*

Biodiversity policy instruments

In 2019, the United Nations General Assembly declared 2021–2030 the United Nations Decade on Ecosystem Restoration. The integrity of almost all natural ecosystems in Uzbekistan is currently threatened, due partly to ongoing climatic changes but also to growing anthropogenic pressures. The biodiversity loss continues, and populations of several rare species continue to decline in size. This means that management approaches applied to date have not provided for effective biodiversity conservation. The recent adoption of the 2019 National Biodiversity Strategy and Action Plan (NBSAP) is a step forward. However, only a few rare and threatened fauna species, and no flora species, are currently covered by single species conservation plans. The same applies to the most vulnerable ecosystems, rare plant communities and habitats. No national wetland policy is in place.

Therefore, undertaking additional efforts aimed at the achievement of the globally adopted biodiversity-related Sustainable Development Goals, and Aichi Target 12 ("By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained") is urgently required, for example, through the development, adoption and implementation of new national policies, strategies and action plans, in particular concerning ecosystems, habitats and species not yet adequately covered.

*Recommendation 11.2:*
*The Cabinet of Ministers should:*

*(a) Ensure implementation of the 2019 National Biodiversity Strategy and Action Plan;*
*(b) Adopt and ensure implementation of the national wetland policy and corresponding programme for wetlands conservation;*
*(c) Adopt and ensure implementation of ecosystem and species action plans and programmes;*
*(d) Mobilize adequate resources for the implementation of all biodiversity-related policy documents in the long run.*

Establishment of the national ecological network

The current PA system does not yet adequately safeguard the biodiversity values, as some main natural ecosystems are underrepresented, while some rare and threatened species do not occur inside current PAs. Furthermore, the national PA system of Uzbekistan is still not a "network" in the common meaning of the term, as the concepts of the ecological network and ecological corridors are absent from the national legislation, policy framework and conservation practice.

The achievement of globally adopted Aichi Target 11, and relevant targets under the Sustainable Development Goals (15.1, 15.4 and 15.5) requires the further extension of the PA system and redesigning it into a functional network.

*Recommendation 11.3:*
*The Cabinet of Ministers should:*

*(a) Adopt amendments to the 2004 Law on Protected Natural Territories, incorporating the concepts of the ecological network and ecological corridors;*

*(b) Designate external buffer zones surrounding or adjacent to the territories of relevant categories of protected areas;*

*(c) Extend the territories of existing protected areas and designate new protected areas, paying due account to the need to provide adequate coverage of all main ecosystem types representative of Uzbekistan and the sufficient inclusion of mainstays and habitats of rare and threatened species, and to ensure the ecological connectivity and continuity of the protected area network by linking core areas with ecological corridors, covering migration routes of rare and threatened terrestrial and aquatic wildlife species;*

*(d) Mobilize adequate resources in order to ensure the proper functioning of the national ecological network in the long run.*

## Chapter 12: ENERGY AND THE ENVIRONMENT

*Assessment*

The national energy mix is represented mainly by natural gas use. However, coal combustion remains present in the country's power production. The construction and commissioning of an NPP is planned to be carried out in the period 2022–2030. The growth of renewable energies (apart from hydropower) has not yet begun. An important aspect is that the country has set targets for the development of renewable energy. The recent developments show Uzbekistan's good intention to develop wind and solar sources.

Uzbekistan has a high level of energy supply per unit of GDP. Energy intensity is high due to own hydrocarbon production and inefficient energy consumption. The energy efficiency potential is high. Energy efficiency has become one of the national policy priorities. The introduction of energy-efficient technologies in the system of street lighting and energy-saving lamps for residential and public buildings is being carried out, and the sale of incandescent lamps with a capacity of over 40W has been halted. However, energy-saving measures and energy-efficiency technologies in industrial enterprises and the residential sector, which could potentially improve energy efficiency in the country, are not sufficiently applied because they require investments and their implementation is much more difficult than lighting upgrades.

The oil and gas industry continues to have environmental and health impacts. Uzbekistan managed to achieve a significant reduction in the volume of gas flaring, from around 1.494 bcm in 2013 to 0.788 bcm in 2018. Flaring intensity was also in decline. However, the waste generated in oil production and processing remains an issue of great concern. Detailed data on sources, types and volumes of pollution and waste discharges during oil and gas activities, which would allow the Government to develop the necessary preventive measures, are lacking.

At present, the raw energy data collected by the State Committee on Statistics are mainly intended as information for governmental institutions and are not harmonized with international standards.

*Conclusions and recommendations*

Data collection

The energy statistics are poorly available outside the governmental bodies and even basic energy data are not publicly available. The internal procedures for statistical data disclosure outside government structures require improvement. The knowledge of national experts on best practices on collection and monitoring of national data on sustainable energy in compliance with international standards is insufficient. Data collection on the energy sector at present does not follow the International Recommendations for Energy Statistics (IRES), adopted by the United Nations Statistical Commission in 2011. Some data that are necessary for monitoring Uzbekistan's progress with the achievement of Sustainable Development Goal 7 are not collected. A political decision to open all information on energy balance was taken in September 2019 but it still needs to be implemented.

Measures to expand statistics collection processes, increase regional and global cooperation on statistics and improve the availability of data on energy, including the energy sector's impact on the environment, are indispensable to gaining greater investor confidence and stronger business interest in the sector.

*Recommendation 12.1:*
*The State Committee on Statistics, in cooperation with the Ministry of Energy, should continue its efforts to:*

*(a) Develop an integrated system of multipurpose energy statistics based on the United Nations Fundamental Principles of Official Statistics and the International Recommendations for Energy Statistics;*
*(b) Publish energy statistics, including national energy balances;*
*(c) Ensure data collection for monitoring progress with the achievement of Sustainable Development Goal 7 in line with the internationally accepted methodologies.*

Energy performance of public buildings

The budget regulations do not allow public sector buildings to keep the savings resulting from energy efficiency improvements in their budgets. Expenditures are determined by the Government and do not allow local authorities to retain or reallocate any savings they make for long-term investments in energy efficiency. In these circumstances, incentives for implementation of energy efficiency improvements are lacking.

*Recommendation 12.2:*
*The Cabinet of Ministers should introduce regulations that will allow the financial resources saved through energy-efficiency measures in public buildings to be accumulated in the budgets of organizations undertaking such measures.*

Fossil fuels

National policy documents envisage that fossil fuels will continue to be a major energy source in Uzbekistan over the medium term and, potentially, the long term. At the same time, the country has underlined the importance of moving towards sustainable energy. Clean fossil fuels technologies can contribute to increasing sustainability.

There are a number of modern clean fossil fuels technologies that could be implemented in Uzbekistan, which would enhance the country's transition to a low-carbon economy. Increased efficiency, flexible operation to support renewables and carbon capture and storage are key technologies that could deliver such a transition.

There is no information on the land and soil polluted by oil products in Uzbekistan. Soils are severely degraded by mining activities, in particular for the extraction of energy sources, since large amounts of soil and vegetation are removed for open pit mining. This also affects local habitats and causes loss of biodiversity and arable lands.

*Recommendation 12.3:*
*The Ministry of Energy should:*

*(a) Gradually reduce the share of fossil fuels in the energy production and consumption, while continuing to explore ways to use them, especially coal, in a more efficient and environmentally friendly manner;*
*(b) Facilitate the use of less polluting energy sources as a valid alternative to fossil fuels;*
*(c) Take measures to increase the efficiency of coal utilization with gradual modernization and technology upgrades at existing coal-fired power plants;*
*(d) While developing its national policy documents to meet Sustainable Development Goal 7, undertake a comprehensive study on the development of advanced fossil fuel technologies that will include their status, trends, economic analysis, environmental and health impacts, and institutional and legislative barriers;*
*(e) Develop economically and environmentally sound policies that also address health impacts in support of Sustainable Development Goal 7, ensuring that such policies are supported by appropriate legal frameworks and economic incentives;*
*(f) Collect information about land and soil polluted by oil products and analyse the environmental impacts of gas leakages in Uzbekistan;*
*(g) Properly address the environmental hazards of open pit mining.*

Electricity

Electricity transmission assets have not been properly maintained and upgraded, affecting the delivery of reliable power supply to domestic customers. There is a high level of electricity losses: transmission system losses are 18

per cent and distribution losses are 14 per cent.

*Recommendation 12.4:*
*The Ministry of Energy should promote the regular maintenance and upgrade of the electricity transmission assets to provide reliable power supply to domestic consumers, especially in southern regions.*

Renewable energy sources

The changes in the energy sector are expected to be introduced by development of RES. The 2017 Resolution of the President No. 3012 on the Programme of Measures for Further Development of Renewable Energy, Increase of Energy Efficiency in Economic Sectors and the Social Sector for the period 2017–2021 anticipates that the share of RES in the national power mix will increase to 19.7 per cent by 2025. Most of the increase is to be achieved through the expansion of hydropower, but the development of solar and wind energy is also firmly on the agenda.

However, at this stage, substantial expansion of electricity generation based on renewable sources faces some resource and technological limitations. The development of renewable energy requires a significant level of state support for a long period of time. At present, Uzbekistan does not apply the traditional support schemes for renewable energy such as feed-in tariffs and competitive bidding/auctions. Support schemes to date have been limited to investment tax credits and reduction in import taxes for renewable energy technologies.

*Recommendation 12.5:*
*The Cabinet of Ministers should:*

*(a) While developing its national policy documents to meet Sustainable Development Goal 7, undertake a comprehensive study on the development of renewable energy technologies that will include their status, trends, economic analysis, and institutional and legislative barriers in renewable energy technology issues in the country;*
*(b) Take appropriate steps to meet the targets of raising the share of renewable energy sources in total power production;*
*(c) Further develop support schemes for renewable energy.*

Nuclear energy

Uzbekistan intends to build an NPP in order to meet the growing needs of the economy for energy resources. Design, construction and commissioning of an NPP of two units with an installed capacity of 1.2 GW each are planned for the period 2019–2029. The Government plans to organize a national EIA and conduct a dialogue with neighbouring countries during the first stage of project development (2019–2020). The organization of a transboundary EIA is not planned. The Concept for the Development of Nuclear Energy for the period 2019–2029 envisages that a safe and cost-effective nuclear fuel cycle would be organized at the NPP but it gives no detail in this respect.

Uzbekistan is not a party to several key conventions on nuclear safety.

The construction and operation of an NPP can potentially have environmental impacts associated with this type of development. The application of internationally adopted standards, taking into consideration recommendations of the IAEA in respect of design, siting, operational safety, radiation safety and safe management of radioactive waste, could provide necessary safeguards to reduce environmental and health risks. An EIA procedure, conducted in line with international standards, is an important mechanism to ensure that environmental, including health, considerations, as well as public opinion, are thoroughly taken into account. Conducting transboundary consultations as part of an EIA is a tool for enhancing the quality of decision-making.

In May 2019, Uzbekistan announced that a priority site location for the future NPP has been identified. The site is close to Lake Tuzkan in the Aydar-Arnasay Lake System, which was declared as a Ramsar site in 2008. Construction of an NPP in the Ramsar site would require sound justification, may result in the need to delete or restrict the boundaries of wetlands already included in the Ramsar List, with these decisions potentially damaging the image of the country on the international arena.

The 2019 Law on the Use of Nuclear Energy for Peaceful Purposes names protection of life and health of citizens and environmental protection among its principles but does not include detailed rules for NPP site selection.

*Recommendation 12.6:*
*The Cabinet of Ministers should:*

*(a) Consider accession to the 1986 Convention on Early Notification of a Nuclear Accident, 1994 Convention on Nuclear Safety and the 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency;*
*(b) Carry out an EIA for the proposed NPP in line with international standards and ensure transboundary consultations as part of the EIA procedure;*
*(c) Ensure application of recommendations of the International Atomic Energy Agency[3] to provide necessary safeguards to reduce environmental and health risks associated with construction and operation of an NPP;*
*(d) Ensure compliance with the country's international obligations under the Ramsar Convention by refraining from the construction of an NPP in the territory of a Ramsar site.*

**Chapter 13: Agriculture and the environment**

*Assessment*

Agriculture has an outstanding role within the economy of Uzbekistan. It accounts for about 32 per cent of GDP. About 27 per cent of the workforce is working in agriculture and its role in rural employment and in securing rural incomes is even higher. Agricultural export was and remains a source of foreign currency for the country. Given the favourable agroclimatic conditions, modernization offers an opportunity to make agriculture more productive and sustainable at the same time.

In the years since 2010, gradual deregulation and crop diversification have been among the main policy objectives for agriculture. Implementation of the crop diversification policy implies possible environmental gains in the form of reduced water, fertilizer and pesticide consumption, and thus the halting of soil quality degradation. Nevertheless, these positive gains are eliminated by the poor state of the irrigation infrastructure.

Despite the introduction of new varieties and intensive (fruit and vegetable) growing methods, sustainable agricultural development (except of some small-scale projects) is still not recognized as an essential factor for ensuring the progressive development of agriculture in the long run. Agricultural policy in Uzbekistan still does not pay enough attention to environmental aspects, not even to its most obvious symptom, irrational water use: by the end of 2019, only 9.6 per cent of the total irrigated area will be subject to some type of water-saving technique.

*Conclusions and recommendations*

Organic agriculture

Although the Government has recognized organic agriculture as one of the flagship subsectors with high export potential and, consequently, possible high revenues, besides the adoption of related standards, the legal framework for organic agriculture is largely lacking. In the absence of legislation on organic agriculture, the establishment of the certification and labelling system is also at a halt. At the same time, organic agriculture is among possible pillars to help Uzbekistan progress towards sustainable agricultural practices and, in a broader sense, towards productive and sustainable agriculture, in line with target 2.4 of the 2030 Agenda for Sustainable Development.

*Recommendation 13.1:*
*The Cabinet of Ministers should ensure the development and adoption of a legal framework, allowing for the establishment of a national certification and labelling system that is recognized internationally, for organic agricultural production.*

[3] Safety Standards for protecting people and the environment, available at IAEA website (www.iaea.org/resources/safety-standards).

Use of water in irrigation

The water losses in agriculture amount to around 30 per cent of the sector's water use in Uzbekistan. By reducing or eliminating water losses, the country would be able to solve the problem of forecast water deficit and save enough water to make reservoirs to mitigate the fluctuations in annual available water quantity caused by the variability of precipitation. Strengthening the capacity of the agricultural sector to adapt to climate change (target 2.4 of the 2030 Agenda for Sustainable Development) can most easily be achieved through reduction of water losses in Uzbekistan.

Outdated irrigation methods and poorly maintained irrigation systems seriously limit the crop yields and lead to soil salinization and low soil fertility. Water-saving irrigation technologies, which are favourable for and respect soil fertility, are not widespread enough and not expanding at an adequate pace, despite their promotion by the Government in the past decade.

*Recommendation 13.2:*
*The Ministry of Agriculture and the Ministry of Water Management should enhance their efforts to further promote water-saving irrigation techniques.*

*See Recommendations 3.5, 9.2.*

Sectoral strategy

In the lack of a comprehensive sectoral strategy and vision, there is a threat that government measures and legislative development will not be consistent. Explicit environmental considerations are also missing from the existing sectoral policy documents and from most of the related legal acts, even though ensuring good environmental conditions in agriculture is of the utmost importance for the sector's long-term sustainability and productivity.

*Recommendation 13.3:*
*The Cabinet of Ministers should finalize and adopt a strategy on agriculture that considers environmental matters, particularly for the rational use of water and for the expansion of environmentally friendly crop cultivation techniques.*

Participation in the International Plant Protection Convention

Despite its strengthening connections with international organizations in the field of plant protection, Uzbekistan has not yet joined the International Plant Protection Convention, although, as a basic preparatory activity, the State Plant Quarantine Inspectorate has already defined a roadmap for accession to the Convention.

*Recommendation 13.4:*
*The Cabinet of Ministers should consider accession to the International Plant Protection Convention.*

**Chapter 14: Transport and the environment**

*Assessment*

The transport sector in Uzbekistan relies on road transport. Over 98 per cent of passenger journeys are currently undertaken on roads while over 88 per cent of freight is also moved by road. Aviation traffic continues to grow, albeit with a newer and less polluting fleet. The Government has pushed for significant change and development of the transport sector to increase its performance, through policy initiatives and legal acts. This has been accompanied by targeted investments in rail, road and aviation which has led, for example, to an improvement in most parameters of the Logistics Performance Index.

These initiatives have helped in the modernization of the sector and have also gone some way towards improving the environmental performance of transport, with a particular focus on road transport. These are initial steps in a transformation process that needs to continue to ensure that the sector counters the ever-increasing use of private

vehicles and road transport as a whole, with initiatives that aim to reduce the environmental impact of road transport and stimulate the use of alternative forms of transport such as the railways and, where this is not possible, alternative propulsion systems.

*Conclusions and recommendations*

Road vehicle emissions

Road vehicles remain the main source of transport-related $CO_2$ emissions. Transport vehicles, in particular private cars and freight vehicles, are currently using low quality fuels on a daily basis. Low octane fuels pollute more and are less efficient when burned in internal combustion engines, leading to negative effects on the environment as well as on the efficiency of vehicles and their durability. This is facilitated by fossil fuel subsidies through regulated prices that incentivize the use of these lower quality fuels. The ForFITS analysis shows that reducing these subsidies can have a significant impact on the environmental performance of the sector henceforth, which can be done not only through the use of cleaner fuels but also through the use of more efficient engines and an increase in electromobility.

*Recommendation 14.1*:
*The Cabinet of Ministers should:*

*(a) Consider the best ways to modulate or reduce fossil fuel subsidies to ensure that higher quality fuels are used in vehicles that have a lower impact on the environment;*
*(b) Encourage the move away from the use of lower quality fuels and the take-up of alternative, low-carbon-fuelled vehicles;*
*(c) Encourage the simultaneous deployment of electromobility along with renewable electricity production to help meet the objective of reducing the total amount of vehicle emissions.*

*See Recommendation 3.2.*

Public transport

The use of public transport remains limited in cities as people continue to prefer to use their private cars to commute and move around the urban environment. This is because, historically, public transport has not been accessible, the networks have not covered key residential areas and the services themselves have not been attractive.

In order to reverse this trend and help in achieving target 11.2 of the Sustainable Development Goals, recent investments have been initiated, such as the extension of the metro and the acquisition of new buses. These initiatives are not supplemented by policies and action plans such as those currently being developed in Tashkent City aimed at rendering public transport and the use of alternative modes of transport more attractive to users.

*Recommendation 14.2*:
*The Cabinet of Ministers and other relevant authorities should:*

*(a) Improve access to, and use of, public transport in the urban environment to reverse the increase in congestion and emissions;*
*(b) Develop and implement coherent policies and actions aimed at incentivizing the use of public transport and of alternative modes such as cycling.*

Long-distance transport

Uzbekistan has invested in the railways in recent years, in both electrification projects and the acquisition of new rolling stock. This has started to have a positive effect on the use of the network with the fast trains between the major cities often full. This shows that there is significant potential for the use of the railways to grow further. Therefore, it is important that continued focus is directed towards this area with the aim of increasing capacity and speed for both passenger and freight trains to further draw traffic away from the roads.

*Recommendation 14.3:*
*The Cabinet of Ministers, in cooperation with Uzbekistan Railways, should facilitate further development of the railway network and the switch away from road transport for both passengers and freight while ensuring that there are good intermodal connections for both passengers and freight for their last mile journeys.*

Road safety

Data show that the number of road fatalities has remained steady since 2015 with only minor fluctuations, at around 80 fatalities per million inhabitants. The number is not decreasing in Uzbekistan, unlike the average in the ECE area, and is well below the requirements in target 3.6 of the 2030 Agenda for Sustainable Development, which requires a 50 per cent decrease in fatalities by 2020. The severity of accidents has increased by about 25 per cent over the period 2005–2016, which also demonstrates that the road infrastructure is not safe for drivers and pedestrians. Vehicles sold in Uzbekistan do not meet the highest possible technical safety standards for the occupants, but also for pedestrians and other road users. In addition, the enforcement of laws and regulations presents challenges.

*Recommendation 14.4:*
*The Cabinet of Ministers should develop a safe-system approach to road safety covering all aspects of road safety activities, including:*

*(a) Coordinated governmental action and policies on road safety, including the involvement of all relevant stakeholders;*
*(b) Investment in making the road infrastructure safe;*
*(c) Appropriate enforcement of driving and road safety laws and regulations;*
*(d) Ensuring that the vehicles registered domestically meet the highest international technical specification standards.*

United Nations transport-related agreements

ECE develops multilateral agreements and harmonized technical regulations for all inland transport modes, offering off-the-shelf legal texts on energy and emissions measurement and mitigation. Vehicle safety features and harmonized development of transport infrastructure are also covered in these multilateral agreements. Uzbekistan is not a party to some of these important agreements and, consequently, is not reaping the rewards from the regulatory framework that they provide.

*Recommendation 14.5:*
*The Cabinet of Ministers should consider accession to transport-related agreements, including:*

*(a) 1958 Agreement concerning the Adoption of Harmonized Technical United Nations Regulations for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these United Nations Regulations;*
*(b) 1997 Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of Such Inspections;*
*(c) 1957 European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR);*
*(d) 1993 Protocol amending article 1 (a), article 14 (1) and article 14 (3) (b) of the European Agreement of 30 September 1957 concerning the International Carriage of Dangerous Goods by Road (ADR);*
*(e) 1989 Convention on Civil Liability for Damage caused during Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessels (CRTD);*
*(f) 1950 Declaration on the Construction of Main International Traffic Arteries;*
*(g) 1975 European Agreement on Main International Traffic Arteries (AGR);*
*(h) 1985 European Agreement on Main International Railway Lines (AGC);*
*(i) 1991 European Agreement on Important International Combined Transport Lines and Related Installations (AGTC).*

## Chapter 15: INDUSTRY AND THE ENVIRONMENT

*Assessment*

The mining and manufacturing industries continue to play an important role in the national economy, being the main drivers of economic growth. During recent years, Uzbekistan has made efforts to diversify its economy through the development of non-resource-based sectors. Nevertheless, the mining industries still account for a significant share of value added and the bulk of exports and foreign investment. Developing a modern approach to the mining sector that can minimize environmental and health impacts while maximizing social and economic benefits can be an opportunity to introduce new, environmentally sensitive practices that can have positive impacts on other, related areas of the economy and ensure that the environmental impact of the mining sector is reduced.

Target 9.2 of the 2030 Agenda for Sustainable Development, on inclusive and sustainable industrialization, is pursued by Uzbekistan through developing manufacturing industry, introducing modernization and innovation and increasing the manufacturing of higher-value-added products. To this end, the Government has adopted several programmes and plans. On the one hand, it has improved modernization and innovation in industry, particularly in manufacturing, during recent years. On the other hand, the lack of environmental, health and safety and social responsibility management objectives lessens their contribution to the well-being of communities that face the negative impacts of industrial operations. Furthermore, programmes on industry development do not systematically include environmental safeguards to reduce the negative environmental impacts of the proposed related industrial projects. This points to a need for a more harmonized approach to the industrial sector, development of which inherently touches upon a number of cross-cutting environmental issues. This need for greater efforts on streamlining environmental considerations into industry sector development should be recognized by the Government whenever mining, manufacturing or large infrastructure investments are planned.

*Conclusions and recommendations*

The greening of industry

In recent years, Uzbekistan has made strides in the greening of industry, where several mining and chemical enterprises have shifted to technologies that allow more efficient extraction and production, generate less hazardous waste and reuse more of the waste. Many of the large enterprises are carrying out modernization through investment in new technologies and devices to reduce air emissions from their facilities, making the country better prepared to achieve target 9.4 of the 2030 Agenda for Sustainable Development. Nevertheless, technological developments are still lagging behind in SMEs that cannot afford to implement emissions reduction measures.

*Recommendation 15.1:*
*In order to support the introduction of green technologies in industry, the Cabinet of Ministers should:*

*(a) Create economic and financial incentives for industrial enterprises to move towards green technology;*
*(b) Foster the creation of small and medium-sized enterprises and start-ups focused on green technology.*

Industrial waste management

Currently, there is no strategy or programme for industrial waste management that includes specific targets and indicators, although some aspects of industrial waste management were reflected in the Concept on Environmental Protection until 2030, adopted in October 2019. In addition, due to the insufficient number of landfills for storage of industrial waste, there is a practice of using unauthorized dumpsites, which are particularly dangerous for the environment. The application of standards to achieve requirements for waste prevention (e.g. minimizing waste volume/weight) are still lacking in the legislation. Measures are not in place for the reuse of industrial waste as a secondary raw material.

There is also a lack of measures to compel manufacturers to design their products in an environmentally sound manner in order to reduce waste and environmental impacts.

Many industrial enterprises do not have wastewater treatment facilities on their premises or do not carry out preliminary treatment. Industrial wastewater is often discharged directly into rivers or urban sewerage systems.

*Recommendation 15.2:*
*The Cabinet of Ministers should:*

*(a) Develop and adopt legislation and policies on the management of industrial waste, setting out specific targets and indicators for industrial waste reduction and reuse;*
*(b) Elaborate appropriate standards for wastewater treatment facilities in industrial enterprises and facilitate installation of such facilities by creating incentives for investments in wastewater treatment and ensuring the financial viability of modern wastewater treatment plants.*

Statistical data on impacts from industrial activities

There are no data available on the annual waste generation from specific industrial sectors. Neither are estimates available on industrial wastewater discharges. Limited or no quantitative information is available on the land uptake and degradation by industrial enterprises.

*Recommendation 15.3:*
*The State Committee on Statistics, in cooperation with the Ministry of Economy and Industry and the State Committee on Ecology and Environmental Protection, should ensure regular collection of environment-related data from industrial enterprises and the publication of such data.*

Environmental safeguards of industrial development

To achieve economic growth, Uzbekistan intensively uses its natural resources, including biodiversity and ecosystem services. Recently adopted programmes on the development of specific industrial sectors do not include environmental safeguards to reduce negative environmental impacts of the proposed related industrial projects; therefore, little information is available on the potential pressures that they may place on the environment.

*Recommendation 15.4:*
*The Cabinet of Ministers should assess the impact of industrial activities on the environment and ensure that new programmes on industrial development contain information on environmental safeguards to reduce negative environmental impacts of the proposed industrial projects.*

Convention on the Transboundary Effects of Industrial Accidents

Uzbekistan is not a party to the ECE Convention on the Transboundary Effects of Industrial Accidents. The ECE Project on Strengthening Industrial Safety in Central Asia (2016–2019) provided support to Uzbekistan in enhancing industrial safety and, thus, protecting human health and the environment. The country prepared and finalized its updated self-assessment, and an updated national action plan, in 2018.

*Recommendation 15.5:*
*The Cabinet of Ministers should:*

*(a) Approve and proceed with the implementation of the National Action Plan for the implementation of priority actions identified based on results of Uzbekistan's self-assessment of progress towards accession to the Convention on the Transboundary Effects of Industrial Accidents;*
*(b) Consider accession to the Convention to fully enjoy its benefits and enhanced level of prevention of and preparedness for industrial accidents with potential transboundary effects;*
*(c) Identify hazardous activities that may cause accidents with potential transboundary effects and subsequently notify its neighbours of such activities.*

Extractive Industries Transparency Initiative

As at 2018, Uzbekistan has not enacted any legislation applying provisions of the Extractive Industries

Transparency Initiative (EITI) standard. A country's participation in the EITI increases the investment attractiveness of its mining industry.

*Recommendation 15.6:*
*The Cabinet of Ministers should develop and enact legislation to ensure implementation of the Extractive Industries Transparency Initiative (EITI) standard.*

Corporate social responsibility

There is no legislation on CSR in Uzbekistan, and the concept has not been widely adopted.

*Recommendation 15.7:*
*The Cabinet of Ministers should develop and adopt legislation on corporate social responsibility.*

**Chapter 16: HUMAN SETTLEMENTS AND THE ENVIRONMENT**

*Assessment*

Human settlements are at the core of the economic development in contemporary Uzbekistan. Their rapid growth also implies rapid changes in the economy, society and the environment – the three pillars of sustainable development.

Rapid growth in the housing sector in any country must be thoroughly sustainable; otherwise, the development is done at the expense of cultural identity, social well-being and the environment. Intervening on the issue of human settlements is an excellent opportunity for Uzbekistan to deliver a new, sustainable country for the next generations and to uplift the country's economy in the world ranking. However, the Government should invest in carefully steering this rapid growth towards successful, long-lasting and truly sustainable development.

Uzbekistan is intensifying its efforts to give a strong impulse to the economy, including through the development of the housing sector and new planning policies, but this rapid evolution does not fully exploit the considerable potential of human settlements in the fight against climate change. Since 2009, Uzbekistan is significantly investing in building new settlements in rural areas, with standardized houses for the rural population. More new dwellings are expected in the years to come; however, in rural areas, new human settlements are resulting in the same model of housing everywhere.

Since 2017, there has been a boost in the construction sector, especially in the City of Tashkent, but also in other major cities. Foreign investors are attracted to support the transformation of the country into a modern state. Support is still lacking for environmental considerations to steer this process, which sometimes does not carefully consider the needs of citizens when investments in large renovation and construction projects take place.

*Conclusions and recommendations*[4]

Climate change concerns

The rapid growth of rural settlements, which occupy previously undeveloped lands all over the country, and the rapid urban expansion of existing cities increase the number of people exposed to the effects of "urban" climate change on the one hand, and upsurges in the production of GHG emissions from human settlements on the other. The country has not yet developed specific policies for adaptation to climate change, and limited information is available on the expected measures to reduce GHG emissions from the housing sector. Such measures are indispensable for the country to deliver on global target 11.b of the 2030 Agenda for Sustainable Development.

*Recommendation 16.1:*
*The Cabinet of Ministers should consider:*

[4] In 2014, Uzbekistan hosted a Country Profile on Housing and Land Management, published by ECE in 2015. Many recommendations of the Country Profile remain relevant in 2019.

*(a) Introducing climate adaptation planning in urban areas and rural settlements;*
*(b) Introducing specific zoning requirements to mitigate GHG emissions and energy efficiency in urban areas and rural settlements;*
*(c) Fully exploiting the potential for GHG emissions reduction from the housing sector;*
*(d) Implementing the use of local materials for the housing sector, to reduce its energy intensity and their carbon footprint;*
*(e) Introducing incentives for investments in low carbon buildings;*
*(f) Introducing incentives to reduce the carbon footprint of the housing sector and to introduce modern technologies in the cement industry by using the carbon footprint calculations;*
*(g) Prescribing the integration of traditional materials, morphologies and aesthetic shapes with contemporary techniques and technologies for the design and construction of new rural housing;*
*(h) Elaborating, maintaining and updating the maps of flood-prone areas;*
*(i) Addressing climate resilience of rural settlements by designs tailored to local climatic conditions (in terms of sun orientation, prevailing wind direction, pervious surfaces, establishment of green infrastructure) and not based on standard multiplication of rows of buildings;*
*(j) Introducing climate change adaptation and mitigation in the policy documents related to urban development.*

*See Recommendation 7.1.*

Industrial facilities in urban areas

The placement of industrial facilities in urban areas remains an issue in Uzbekistan and no measures have been taken to remove such facilities from urban areas. Improvements in this area could significantly contribute to Uzbekistan's progress towards achievement of Sustainable Development Goal 11.

*Recommendation 16.2:*
*The Cabinet of Ministers should ensure:*

*(a) Removal of existing industrial facilities from urban areas;*
*(b) Strengthening environmental requirements for the localization of new factories, or the upgrading of existing ones in urban areas.*

Cultural identity and urban landscape

Uzbekistan does not integrate the approaches to cultural identity and urban landscape envisaged by the European Landscape Convention into the planning, design and construction processes. The Tashkent Institute of Architecture and Construction is carrying out studies on how to reintroduce ancient typical urban morphologies and urban patterns in contemporary Uzbekistan. The findings of these studies are not used to improve the quality of urban areas and rural settlements and the life of their inhabitants.

*Recommendation 16.3:*
*The Cabinet of Ministers should consider:*

*(a) Introducing an extended concept of landscape, which takes into account the promotion of Uzbek cultural identity;*
*(b) Taking stock of existing studies carried out by Uzbek universities to introduce distinctive elements of Uzbek identity in housing and urban and rural settlement design, to improve the quality of life in cities and rural areas;*
*(c) Promoting awareness-raising activities on distinctive Uzbek cultural identity and architectural and urban forms.*

Public participation

Effective public participation is not ensured in the choices affecting the territory, nor do the local administrations have a predominant role in the planning framework. The new architectural undertakings require the approval of

the territorially competent makhalla chairperson, but often local inhabitants complain because of the lack of information and involvement in the decision-making process.

*Recommendation 16.4:*
*The Cabinet of Ministers should ensure:*

*(a) Effective public participation in the elaboration of plans and programmes affecting the territory at the earliest stage possible;*
*(b) Effective public participation in decision-making on projects to be implemented in inhabited areas, and specifically those that would entail their total or partial transformation;*
*(c) That due account is taken of the outcomes of such public participation procedures.*

*See Recommendation 5.3.*

GIS systems and remote sensing

GIS systems and remote sensing allow the geolocalization and management of cultural heritage, the monitoring of illegal settlements and territorial management. They also enable web interfaces to inform the public and disseminate environmental information. However, GIS systems and remote sensing are not used for these purposes in Uzbekistan.

*Recommendation 16.5:*
*The Cabinet of Ministers should facilitate the updating of remote sensing and GIS systems to:*
*(a) Geolocalize, manage and monitor protected sites and objects of culture;*
*(b) Share information about cultural heritage and raise awareness among the population about the importance of cultural heritage;*
*(c) Monitor the construction activities inside and outside urban areas.*

Energy efficiency of housing

The existing housing stock is highly energy inefficient. Construction standards changed in 2018, introducing new energy efficiency requirements. Those standards apply only to new construction projects; therefore, existing buildings are not subject to a requirement for improving energy efficiency. The UNDP-GEF Project "Market Transformation for Sustainable Rural Housing in Uzbekistan" has demonstrated the benefits of introducing energy efficient and low carbon solutions for the construction of rural housing. As of November 2019, the use of solar thermal collectors for hot water and photovoltaics is not widespread in new and existing buildings.

No certification systems aligned with international standards, such as Leadership in Energy and Environmental Design (LEED) or Building Research Establishment Environmental Assessment Method (BREEAM) are implemented in the country.

*Recommendation 16.6:*
*The Cabinet of Ministers should:*

*(a) Develop and introduce energy efficiency standards and requirements for existing buildings;*
*(b) Enforce the 2018 construction standards;*
*(c) Promote in the housing sector the use of:*
  *(i) Market-based solutions for energy efficiency;*
  *(ii) Geothermal systems;*
  *(iii) Solar thermal collectors for heating water and air and generating electricity.*

Urban ecological networks

Urban ecological networks are not developed in Uzbekistan. The development of ecological networks within urban areas would be useful to promote their sustainability, and would allow Uzbekistan to move beyond merely greening cities towards having cities that provide habitats for native biodiversity.

*Recommendation 16.7:*
*The Cabinet of Ministers should consider developing and implementing urban ecological networks.*

Asbestos

Asbestos is still considered a cheap and appropriate construction material in Uzbekistan, and therefore is extensively used. The interviewed population and technical officers believe it is not harmful as long as it is used to produce compact materials, and they see no risk of volatile emissions.

*Recommendation 16.8:*
*The Cabinet of Ministers should:*

*(a) Ban asbestos as a construction material and its use in the remediation of existing buildings;*
*(b) Organize dedicated campaigns to inform the population of the extreme danger of asbestos for human health.*

Social protection and social housing

Issues related to the rapid development and refurbishment of inhabited parts of cities to safeguard inhabitants of residential buildings listed for demolition and reconstruction are not adequately addressed by the Government.

There is no information about the provision of social housing aimed at giving a home to the socially vulnerable and low- or no-income people.

*Recommendation 16.9:*
*The Cabinet of Ministers should:*

*(a) Implement social protection measures aimed at safeguarding the rights of inhabitants of residential buildings that receive demolition orders;*
*(b) Ensure the provision of social housing for people in vulnerable categories and the low-income population.*

Urban development

In Uzbekistan, developers do not pay development impact taxes but are obliged to provide a certain percentage of built-up volume in the form of apartments to be allocated to most vulnerable people. In Europe, the development impact taxes can be used to finance the building or upgrading of necessary urban infrastructure or funding health and social care facilities.

*Recommendation 16.10:*
*The Cabinet of Ministers should consider:*

*(a) Introducing development impact taxes;*
*(b) Requiring that large construction developments fully compensate the communities affected by demolition and reconstruction;*
*(c) Introducing strategic environmental assessment as a support tool to develop sustainable urban planning documentation.*

*See Recommendation 1.3.*

**Chapter 17: Health and the environment**

*Assessment*

Improvement of the health of the population, achieved within the past decade, has led to increased life expectancy. However, progress has been slow, and Uzbekistan still faces public health challenges. Those include a high burden of disease through the rising prevalence of NCDs, in particular, cardiovascular diseases leading to premature mortality and disability. At the same time, the incidence and prevalence of some communicable

diseases, such as TB and, in particular, multidrug-resistant TB, remain a concern. Health risks related to behavioural and metabolic factors are persisting, showing that public health interventions have not been effective enough.

Environment-related health risks and hazards remain high: population exposure to air pollution far exceeds WHO Air Quality Guidelines and is leading to a burden of disease and mortality that is among the highest in the WHO European Region. Access to safe water and sanitation remains a major problem, with important regional disparities, yet the burden of waterborne diseases is not adequately recognized, owing to deficiencies in infectious disease surveillance. Changing and variable climate is creating greater potential for such hazardous environmental exposures. A significant number of people live in areas prone to flash floods, mudflows, heatwaves, droughts and dust storms, which are becoming more frequent and intense, resulting in damage and loss and excessive rates of morbidity and mortality. Though limited, the available data suggest that the consequences of and losses due to disasters do not seem to be decreasing and this is also because of the weak disaster resilience.

Several policies and regulations were put in place that aimed at reducing environmental pressures from economic sectors and improving environmental quality, but health aspects have not been sufficiently considered. On the other hand, the health sector is being primarily focused on health care, while prevention measures are limited to immunization. A lack of reliable information on public health and its determinants and trends undermines consideration of health aspects during policy formulation and monitoring and evaluation of policy effects on health during implementation.

As at mid-2019, the country is in the middle of implementation of a profound economic and societal reform and has started the implementation of the 2030 Agenda for Sustainable Development. The coincidence of the two processes creates a good opportunity to advance the integration of health and environmental aspects in other sectors' policies and regulations.

*Conclusions and recommendations*

Strengthening systematic generation of health information and its use

Reliable information on public health status, including its determinants and trends, is essential to guide health-care providers, managers and decision-makers, as well as to make policy in other sectors accountable concerning the health of the population. Despite efforts to modify it, the current data collection system is fragmented, with different data collection mechanisms operating independently from each other without clear coordination. Several aspects of data collection and reporting mechanisms that are in place undermine the validity and reliability of data. Information on population health, also in the context of indicators for Sustainable Development Goal 3, is becoming increasingly available on the State Committee on Statistics website, but primarily in the format of numerical tables; analytical information on health, including the environment and health dimension, is lacking.

*Recommendation 17.1:*
*The Ministry of Health, in cooperation with relevant governmental authorities, should:*

*(a) Introduce legally specified data flows to streamline data reporting by public health authorities, avoiding duplication while ensuring the involvement of all relevant institutions, e.g. primary health-care centres, hospitals and health-care institutions;*
*(b) Ensure training of all involved in data reporting in uniform diagnosis and case registration;*
*(c) Establish a publicly available information system that includes data and indicators and some simple indicator-based analysis and reporting tools at the national, oblast and district levels.*

Advancing disease surveillance

The current surveillance system is prone to underreporting as organizational arrangements on disease data reporting from all relevant health-care institutions to SSESS are not in place. Surveillance of infectious diseases, in particular those related to the environment, such as water- and food-borne diseases, as well as human zoonoses, has severe limitations. Detection of pathogens in water supply and food products is rather limited and so is the associated analytical capacity.

*Recommendation 17.2:*
*The Ministry of Health, in cooperation with relevant governmental authorities, should:*

*(a) Enhance infectious disease surveillance through the introduction of integrated service delivery;*
*(b) Strengthen laboratory networks through cost-effective upgrading of selected laboratories with enhanced capabilities to diagnose a range of infectious diseases and to detect bacterial, viral and parasite pathogens in water and food samples;*
*(c) Improve capacity and skills to apply analytical epidemiological and public health methods to both infectious and non-communicable diseases, and other relevant data at the national and subnational levels, in order to prepare periodic reports aiming at informing health managers and as a basis for disease control and prevention.*

### Maternal and child health

The health of mothers and children is one of the high priorities for the Government, and the country has made considerable efforts to improve the quality and coverage of health-care services. As a result, maternal, neonatal and under-5 mortality rates have decreased, but they are still among the highest in the WHO European Region, making targets 3.1 and 3.2 of the 2030 Agenda for Sustainable Development of crucial importance to Uzbekistan. The unequal distribution of health-care services throughout the country and the lack of qualified health professionals in remote rural areas present important challenges for mothers' and children's health. Under current health-care financing, differences in income among population groups results in further health inequalities.

A large proportion of the burden of disease due to diarrhoea and respiratory and other infections falls on children, most of it being preventable, but available data is insufficient for setting effective and targeted measures throughout the country.

*Recommendation 17.3:*
*The Ministry of Health, in cooperation with relevant governmental authorities, should:*

*(a) Improve access to quality preventive and therapeutic and diagnostic services for pregnant women and newborns throughout the country, in particular in remote rural areas, and introduce changes in health-care financing to ensure equitable access to health services;*
*(b) Improve collection of data and information on maternal and child health and its determinants to meet the needs of health-care providers and those engaged in health protection.*

### Advancing population access to safe drinking water and adequate sanitation

Uzbekistan has made substantial investments in upgrading its water supply and sanitation services in the last decade, but provision of safe water and sanitation remains a problem with important regional disparities. The burden of diarrhoeal diseases due to a lack of adequate water, sanitation and hygiene is one of the highest in the WHO European Region. The level of connection to sewerage systems is low, creating an unsanitary environment and posing a risk of groundwater contamination.

Present policies focus on large infrastructure and do not allow small-scale services to be addressed effectively. Implementation of water safety plans for small-scale water supplies throughout the country, targeted measures to improve hygiene and sanitation conditions and strengthening hygiene education would provide cost-effective solutions and health benefits by reducing water-related risks in the entire population.

*Recommendation 17.4:*
*The Cabinet of Ministers should:*

*(a) Ensure that the modernization of water treatment systems and distribution networks and connection to sewerage systems is governed by achieving maximum reduction of population health risks from water contamination;*
*(b) Ensure progressive implementation of the WHO water safety plans for small-scale water supplies across the country;*

*(c) Ensure that gender analysis is taken into account in the development of measures on access to water and sanitation;*
*(d) Support development and implementation of programmes to improve hygiene and sanitary conditions in the countryside and reinforce hygiene education.*

*See Recommendation 9.2.*

Climate change and extreme weather events

Climate change in Uzbekistan is bringing excessive cardiovascular and respiratory morbidity and mortality and acute intestinal infections, and its impacts are growing. The flash floods and mudflows, heatwaves, dust storms and droughts to which the country is and will be particularly vulnerable pose multiple risks to people's health. Yet there are no systematic policy actions in place targeted to protecting people's health from climate change and to reducing life-threatening risks from natural disasters.

The capacity of the health sector to assess climate-change-related health status and trends as a basis for planning preventive measures and monitoring their effects and effectiveness is insufficient. The country is advancing in emergency preparedness and response systems but lacks practical experience in disaster risk reduction and prevention, building disaster resilience and instituting effective early warning systems at the community and other levels.

*Recommendation 17.5:*
*The Cabinet of Ministers should:*

*(a) Ensure integration of concrete actions on protecting the population's health from climate change, along with mechanisms for monitoring their effects and effectiveness in future national strategic documents on climate change adaptation and mitigation and on disaster risk reduction;*
*(b) Ensure development and sustainable operation of early warning systems, in particular for flash floods, mudflows and heatwaves;*
*(c) Support the broader dissemination and use of climatic and meteorological information and data among various stakeholders at the central and local levels, to advance preparedness for and resilience to extreme weather events;*
*(d) Reinforce the building of climate-resilient water supply and sanitation services following the 2010 Guidance on Water Supply and Sanitation in Extreme Weather Events developed under the Protocol on Water and Health;*
*(e) Ensure capacity-building on climate change, the environment and health among the relevant authorities.*

*See Recommendation 7.1.*

Intersectoral collaboration on the environment and health

Sustainable improvements in health and the environment can be achieved only through coordinated policy actions across sectors. Specific mechanisms to ensure this are currently not present in the country.

*Recommendation 17.6:*
*The Cabinet of Ministers should endorse mechanisms for intersectoral collaboration on the environment and health and the necessary organizational arrangements, and allocate financial resources for these purposes.*

*See Recommendation 1.4.*

# *IMPLEMENTATION OF THE RECOMMENDATIONS IN THE SECOND REVIEW*[5]

**Chapter 1: Policymaking framework for sustainable development and environmental protection**

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

The recommendation was not implemented, but, as at 2019, it is no longer relevant. The National Commission for Sustainable Development (abolished in 2005) was not re-established. However, in October 2018, the Coordination Council on Implementation of National Sustainable Development Goals was established. This Coordination Council is meant to guide the implementation of the 2030 Agenda for Sustainable Development (chapter 1).

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

The recommendation was not implemented.

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

The recommendation was implemented. No new national environmental action plan was developed to replace the 1998 one. However, the 2008 Programme of Actions on Environmental Protection for the period 2008–2012 and the 2013 Programme of Actions on Environmental Protection for the period 2013–2017 were approved, and many activities under these programmes were implemented.

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

The recommendation was not implemented. No draft environmental code was prepared. As at 2019, preparation of an environmental code is envisaged by several national policy documents.

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

The recommendation was not implemented.
**Chapter 2: Compliance and enforcement mechanisms**

[5] The second review of Uzbekistan was carried out in 2009 and published in 2010.

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

The recommendation was not implemented.

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

The recommendation was partially implemented. The regulation on environmental audit (2015 Resolution of the Cabinet of Ministers No. 286) sets basic legal terms and conditions for application of this tool. It also sets the procedure for conducting environmental audit, as well as requirements of environmental auditors and audit reports. No effective measures were taken for practical application of the regulation, including through implementation plans and guidelines.

Activities on the development of new regulatory acts on environmental impact assessment (chapter 2) and on the introduction of strategic environmental assessment (chapter 1) are in progress in Uzbekistan.

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

The recommendation was not implemented.

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

The recommendation was partially implemented.

SCEEP periodically reviews the efficiency and effectiveness of administrative sanctions for environmental offences. As a result, the 1994 Code on Administrative Liability was amended and set more severe penalties for repeated administrative offences relating to the protection of underground resources (article 70) and water resources (article 72), as well as for violations relating to protected areas (article 82). The Code on Administrative Liability provides for the application of administrative fines for illegal dumping of solid municipal and construction waste and illegal discharge of municipal wastewater, including higher fines for repeated violations. These amendments do not address the issue of systemic violation of environmental legislation. Non-compliance with each environmental requirement is still being treated separately and no administrative tools are available to deal with environmental non-compliance of a systemic nature.

*Recommendation 2.5:*
*In order to harmonize the instruments of environmental impact assessment and public participation with the relevant ECE instruments, the Cabinet of Ministers should:*
*(a) Speed up the process of ratification of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) and the Kiev Protocol on Pollutant Release and Transfer Registers of the Aarhus Convention;*

*(b) Establish a detailed legal and regulatory framework to ensure the full implementation of these instruments.*

The recommendation was not implemented.

**Chapter 3: Monitoring, information, public participation and education**

*Recommendation 3.1:*
*The State Committee for Nature Protection, in coordination with other government bodies and with the assistance of the inter-agency coordination council on environmental monitoring, should:*

*(a) Enlarge the environmental monitoring networks in an optimal way to meet the requirements of monitoring regulations;*
*(b) Increase the number of parameters measured, in particular PM2.5, PM10, volatile organic compounds, polyaromatic hydrocarbons and persistent organic pollutants in ambient air, and additional biological parameters in water;*
*(c) Switch gradually to automatic measurement, and improve data quality control and storage procedures;*
*(d) Make the monitoring of biodiversity an effective part of the state monitoring programme;*
*(e) Establish an integrated environmental database at the State Committee for Nature Protection which should be interlinked with the environmental databases of the other public authorities operating environmental monitoring programmes.*

The recommendation was partially implemented.

(a) There has been no noticeable increase in the environmental monitoring networks. In some cases, the number of stations actually decreased, for example, the air quality monitoring network. The density of the latter has decreased since 2010, remaining lower than the requirements of national monitoring regulations (one station per 50,000–100,000 city dwellers).
(b) There was no increase in the number of parameters monitored and, in the case of air quality, $PM_{2.5}$ and $PM_{10}$ are still not being regularly monitored.
(c) There was no gradual switch to automatic measurements in the environmental monitoring network during the period 2010–2019.
(d) Although biodiversity monitoring has been an effective part of the state monitoring programme since 2011, as at 2019, an integrated biodiversity monitoring system is still not operational.
(e) An integrated database at SCEEP interlinked with the environmental databases of other relevant public authorities with responsibilities in the implementation of the state environmental monitoring programme was not established.

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

The recommendation was partially implemented.

The national standards "Drinking water. Hygienic requirements and quality control" (Oz'DSt 950: 2011) and "Sources of centralized drinking water supply. Hygienic, technical requirements and selection rules" (Oz'DSt 951: 2011) were revised. As a result, the MAC values for most parameters conform to international standards, including the WHO Drinking Water Quality Guidelines, and the number of the controlled parameters is comparable to the EU Directives (chapter 17).

The 2011 SanPiN No. 0293-11 set MAC values for a large number of air pollutants (485) but fail to define specific standards for $PM_{10}$, $PM_{2.5}$ and TSP (chapter 8).

*Recommendation 3.3:*

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

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

The recommendation was partially implemented.

Only very limited environment-related data are made easily accessible to the public through websites, such as, for example, on air pollution in Tashkent City, which is published on the website of Uzhydromet. Uzhydromet does not make any other environmental data available online, neither do SCEEP, the State Committee on Geology and Mineral Resources, the Ministry of Agriculture, the Ministry of Water Management or the State Committee on Statistics (which does publish a variety of data and statistics on its website, but not environmental statistics).

Similarly, most environmental or environment-related publications are not made publicly available. The many environmental monitoring bulletins and reports produced monthly, quarterly and annually by Uzhydromet are for distribution to other government agencies only and are not made available to the public in any format.

The last national report on the state of the environment and use of natural resources (which was produced in 2013 and covered the period from 2008 to 2011) was not developed as an indicator-based report in line with the ECE Guidelines for the Preparation of Indicator-based Environment Assessment Reports in Eastern Europe, Caucasus and Central Asia (chapter 4).

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

The recommendation was partially implemented. As of 2018, the public is provided with the opportunity to participate in commenting on draft laws and by-laws. Other than that, there is little evidence that the provisions of the Aarhus Convention have been introduced into the national legislation and regulations to make them clear, transparent and consistent. Moreover, no information is available to assess whether representatives of civil society have been involved in the work carried out from 2008 until 2019 to introduce mechanisms and requirements of the Aarhus Convention into the national legislation and regulations. Detailed specifications, procedures and guidance are lacking to make access to information, public participation and access to justice in environmental matters a reality (chapter 5).

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

*(a) Speed up the finalization of the national action plan for the implementation in Uzbekistan of the UNECE Strategy for Education for Sustainable Development;*

*(b) Review the composition of the Coordinating Council on Environmental Education and Education for Sustainable Development by raising the level of representation and involving all stakeholders to make the Council an effective instrument for implementing the Strategy.*

The recommendation was not implemented.

**Chapter 4: Implementation of international agreements and commitments**

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

The recommendation was implemented only in 2019 when the new National Biodiversity Strategy and Action Plan was adopted. Only a few rare and threatened fauna species, and no flora species, are currently covered by single-species conservation plans (chapter 11).

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

The recommendation has not been implemented.

*Recommendation 4.3:*
*The responsible ministries should further comply with the substantive elements as incorporated in the Convention on Long-range Transboundary Air Pollution and the Convention on the Transboundary Effects of Industrial Accidents.*
*The Cabinet of Ministers should decide to accede to these two UNECE conventions and to the Geneva Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP Protocol) under the framework of the Convention on Long-range Transboundary Air Pollution.*

The recommendation was partially implemented. The country has progressed in recent years in preparation for joining the Convention on Long-range Transboundary Air Pollution, the Convention on the Transboundary Effects of Industrial Accidents and the EMEP Protocol. However, as at 2019, no accession had taken place.

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

The recommendation was partially implemented. Uzbekistan acceded to the Stockholm Convention in 2019. It has not yet acceded to the Rotterdam Convention.

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

The recommendation was not implemented.

**Chapter 5: Economic instruments and expenditures for environmental protection**

*Recommendation 5.1:*
*The State Committee for Nature Protection, the Ministry of Finance and the Ministry of Economy should:*
*(a) Define a mechanism to review the rates of payments for environmental pollution;*
*(b) Simplify the system of pollution charges, focusing on a reduced number of pollutants and determining rates to create stronger incentives for changes in behaviour.*

The recommendation was partially implemented.

(a) Rates of payments for environmental pollution established in 2006 were revised upwards in 2017 and 2018. Moreover, from the beginning of 2018, these rates are indexed on the official monthly minimum wage.

(b) This part was not implemented.

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

The recommendation was not implemented.

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

The recommendation was not implemented. No changes have taken place concerning these recommendations. Local/regional environmental funds were abolished in 2017 and consolidated into the national environmental fund (chapter 3). No annual reports of the activities of the funds are publicly available. Quarterly reports on revenues and expenditures are submitted to the Ministry of Finance, which exercises state control in these matters.

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

The recommendation was partially implemented.

(a) This part was not implemented.
(b) Uzbekistan has continued to impose taxes on a range of energy products, such as petrol and diesel fuel. The corresponding revenue is allocated to the state budget.

**Chapter 6: Sustainable management and protection of water resources**

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

The implementation of this recommendation is ongoing.

(a) The Government has worked with donors and IFIs to deliver investments to upgrade infrastructure, including irrigation canals and associated infrastructure. However, the impact of these investments with regard to water saving is not assessed on a regular basis, which does not allow prioritization of future investments. Water losses in irrigation remain very high. Between 14.6 $km^3$ and 17.7 $km^3$ of water is lost annually through agricultural activities (table 13.4).
(b) There is evidence of a significant roll-out of drip irrigation technologies, with plans for further deployment. Efficient irrigation practices are also being adopted.

*Recommendation 6.2:*
*The Cabinet of Ministers should:*
*(a) Develop and introduce legal acts on integrated water resources management principles;*
*(b) Establish an appropriate structure with sufficiently high status focused on integrated water management*

*planning and responsible for ensuring the coordination of actions in the water sector, and promote the required institutional development, taking into account international experience;*

*(c) Establish a mechanism with stakeholders from the Government, non-governmental organizations, academia and the private sector to initiate and carry on a national policy dialogue on integrated water management within the framework of the European Union Water Initiative, as well as the UNECE Water Convention and its Protocol on Water and Health, with the UNECE as key strategic partner.*

This recommendation was partially implemented.

(a) A legal act specifically on IWRM principles was not adopted. However, a number of decisions have been made that are starting to position water management in this general direction, for example, the reorganization of the basin organizations. The requirement to update the water strategy by 2023 might allow for further development in this area.
(b) The Ministry of Water Management has a number of key tasks that should position the country well with regard to IWRM. These include implementation of a unified policy on water resources management and coordination of the activities of state bodies, financial management bodies and other organizations in the field of rational use and protection of water resources.
(c) A national policy dialogue on IWRM was not established.

*Recommendation 6.3:*

*(a) The Agency Uzkommunkhizmat and the local authorities should improve the efficiency of wastewater treatment.*

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

The implementation of this recommendation is ongoing.

(a) The establishment of Suvsoz has allowed a focus on wastewater treatment in Tashkent City. It has secured finances to upgrade the infrastructure. Wastewater treatment elsewhere in the country is of variable quality and industrial discharges remain a particular concern.
(b) Infrastructure planning is done according to five-year programmes established by resolutions of the President, for example, the 2017 Programme for Comprehensive Development and Modernization of the Drinking Water Supply and Sewerage Systems for the period 2017–2021 (2017 Resolution of the President No. 2910). There is currently no long-term national water strategy. All ministries are updating their strategic documents at present and the water strategy is reported as being scheduled for delivery in 2023.

**Chapter 7: Land management and protection**

*Recommendation 7.1:*

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

The implementation of this recommendation has started with regard to water-saving techniques. The expansion of environmentally friendly crop cultivation techniques has not started.

*Recommendation 7.2:*

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

The implementation of this recommendation is ongoing.

There has been little progress in creating a liberalized market environment in agriculture. Land ownership has remained public and land allocations to the two strategic crops (cotton and wheat) are not driven by market

signals. Household farms which produce high-value horticulture products and livestock are constrained by a lack of access to value chains and essential farm support services. Weak property rights in land have curtailed management and investment incentives and raised issues of "fair and just" access to farmland by the rural population. In early 2019, the Government initiated a new wave of farm consolidation, with the main target of increasing the size of wheat and cotton farms rather than focusing on creating more effective market signals and developing agricultural support services.

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

The recommendation was partially implemented. An integrated network of protected natural areas was not established. The monitoring of biodiversity remains weak. Some extensions of the protected area network took place in the past decade and there are some positive examples of ecological connectivity on a local scale (chapter 11). The policy framework for the management of protected areas was enhanced with adoption of the 2019 Roadmap for the development of the protected area system for 2019–2022, but the concepts of the ecological network and ecological corridors remain absent from the legislation.

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

The recommendation was not implemented.

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

The recommendation was not implemented.

**Chapter 8: Energy and the environment**

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

The recommendation was partially implemented. A JSC National Energy Saving Company was created in 2017 but dismantled in 2019 following the establishment of the Ministry of Energy, which assumed the responsibilities in the field of energy efficiency. No separate state agency on energy efficiency and renewable energy is in place.

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

The recommendation was not implemented.

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

The recommendation was partially implemented.

(a) Traditional RES support schemes such as feed-in tariffs and competitive bidding/auctions have not been applied to date. There are, however, provisions for support in the form of investment tax credits and reduction in import taxes for RES technologies.
(b) There are examples of agreements signed with international investors on renewable energy development. However, much more can be done in this area.

**Chapter 9: Climate change and the environment**

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

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

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

The implementation of the recommendation is ongoing. As at 2019, Uzhydromet, in collaboration with UNDP, is preparing a project submission under the Green Climate Fund Readiness and Preparatory Support window to obtain necessary resources for the development of the National Adaptation Plan.

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

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

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

The recommendation was partially implemented. As at February 2019, the country is not a party to the Protocol on Strategic Environmental Assessment to the Espoo Convention, but some preparatory activities have taken place (chapter 1). Strategic environmental assessment is not applied in practice in Uzbekistan. Provisions defining the scope of state ecological expertise and environmental impact assessment do not explicitly cover emissions of GHGs.

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

The implementation of the recommendation is ongoing. The GHG inventory development process is still externally funded, with Uzhydromet, in collaboration with UNEP, having recently received funds from GEF for the development of the Fourth National Communication to the UNFCCC.
*Recommendation 9.4:*
*The Government should:*
*(a) Give adequate attention to projects with a high mitigation potential, especially in terms of $CO_2$ and $CH_4$ emissions;*

*(b) Ensure $CO_2$ and $N_2O$ emissions do not increase as a result of increased brown coal combustion and extraction, which is part of the country's new energy policy.*

The recommendation has been partially implemented. Uzbekistan has been very active in registering CDM projects, which mostly focus on $CH_4$, a sensible choice given the scale of the problem with fugitive emissions in the energy sector. Given the lack of availability of recent data on GHG emissions, there is no basis for indicating whether energy policy changes considered in 2010 have had an effect on GHG emissions.