

***PART I: ENVIRONMENTAL GOVERNANCE AND  
FINANCING***



## Chapter 1

# LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK

### 1.1 Legal framework and its implementation

The legislation of Uzbekistan is generally coherent and of good quality in terms of the legal drafting techniques. It is fully accessible to the population through a governmental online database (lex.uz). Since 2015, the public also has online access to draft legislative acts (regulation.gov.uz) and is able to submit comments, though not many comments are submitted (chapter 5). In 2019, Uzbekistan introduced regulatory impact assessment<sup>3</sup> but no practical experience in using this instrument has yet been gained.

Laws in Uzbekistan, including environmental ones, are rather general and short, with many reference rules that envisage that respective issues are to be addressed through subsidiary legislation. Decrees and resolutions of the President and resolutions of the Cabinet of Ministers are acts of subsidiary legislation that are extremely important in the context of Uzbekistan. They are adopted and amended much more dynamically than laws and often include not only the legal rules but also key policy directions and major institutional changes.

With few exceptions, no profound changes were made to laws on environmental issues since 2010. On the contrary, there have been profound developments to environmental and sectoral legislation through the adoption of decrees and resolutions of the President and resolutions of the Cabinet of Ministers. This has particularly been the case since 2017 when the intensity of legislative activities has increased at times.

As at early 2019, several policy documents in Uzbekistan envisage the development of an environmental code. The primary reasoning behind the codification is to harmonize the environmental legislation and make it more convenient for users. It is expected that codification would raise the profile of environmental norms, even though codes in Uzbekistan formally have the same legal value as other laws.

### *Environmental legislation*

#### Horizontal issues

Since 2010, there were no significant changes in the 1992 Law on Nature Protection. The 2013 amendments replaced the need to obtain the permission of environmental authorities with the need to obtain state ecological expertise (SEE) conclusions for such activities as disposal of radioactive waste, disposal of chemical substances, and processing, disposal and storage of waste at landfills. The 2014 amendments brought the Law on Nature Protection in line with the 2013 Law on Environmental Control. The amendments introduced to the Law on Nature Protection in 2017 reflected the institutional changes in the system of environmental authorities, expanded the list of requirements for the use of subsoil and mineral deposits and clarified the terminology.

The 2013 Law on Environmental Control is a new law that for the first time provides an overarching legal framework regulating various types and forms of control in the area of environment. It covers state environmental control, internal control (when the legality of inspections, permits or SEE conclusions is being checked by a higher governmental body), self-monitoring and public environmental control. Subsidiary legislation has been adopted to regulate each type of control (2014 Resolution of the Cabinet of Ministers No. 216 and 2015 Resolutions of the Cabinet of Ministers No. 286 and No. 287). The Law delineates the responsibilities of various bodies entrusted to perform environmental control, including the State Committee on Ecology and Environmental Protection (SCEEP), the Ministry of Health (drinking water supply, radioactive/chemical substances, adverse impacts of physical factors on ambient air), the Ministry of Internal Affairs (air pollution from vehicles), the Ministry of Water Management (water use from artificial water bodies), etc. It describes such forms of control as inspections, environmental monitoring, SEE and environmental audit. Environmental audit in Uzbekistan is a “self-control” instrument for enterprises, as it can only be ordered by an enterprise wishing to evaluate its environmental

<sup>3</sup> Regulatory impact assessment is a set of measures aimed to identify possible positive and negative effects of the adoption of a draft law or regulation.

performance. As at early 2019, a draft law on environmental audit has been prepared.

Since 2010, the 2000 Law on Ecological Expertise has not been subject to other than minor amendments. However, a new Regulation on Ecological Expertise (2018 Resolution of the Cabinet of Ministers No. 949) was adopted in 2018 to replace the 2001 Regulation. The changes brought about by the new Regulation are mostly clarificatory and correspond to what was already existing practice. The lists of activities of high, medium, low and local risk were slightly modified, and nuclear plants were added to the list of high-risk activities.

#### Air protection and ozone-depleting substances

The 2013 amendments to the 1996 Law on Ambient Air Protection clarified the role of the SEE and, in particular, SEE conclusions as the key document (instead of a permit) that determines the conditions for decontamination of banned and obsolete chemicals and for regulation of air emissions by stationary sources.

More significant amendments were introduced to this Law in 2019. They clarify the competences on air protection of the Cabinet of Ministers, SCEEP and local authorities, as well as the roles of local self-government bodies and non-governmental organizations (NGOs). They clearly outline the division of responsibilities with regard to the state control of air pollution between SCEEP (pollution sources), the Ministry of Health (sanitary protection zones and residential areas) and the Ministry of Internal Affairs (vehicles). Temporary suspension and termination of polluting activities can now be requested not only for stationary but also for mobile pollution sources. The governmental authorities that can request temporary suspension and termination now also include the Ministry of Internal Affairs, in addition to SCEEP, the Ministry of Health and local executive authorities (khokimiyats). The 2019 amendments abolish the standards for air consumption for industrial needs that used to be developed by enterprises and approved by SCEEP – such standards are no longer required. A set of other amendments to the Law has been discussed since 2016 but is not yet adopted. These amendments envisage gradual transition to stricter emission standards, provide for economic incentives as tools to reduce air pollution and include provisions on transboundary air pollution.

The 2019 amendments include detailed requirements on ozone-depleting substances (ODSs). They impose more responsibilities on enterprises with regard to

ODS accounting, recycling (primary treatment to allow reuse) and replacement. The 2018 Resolution of the Cabinet of Ministers No. 17 (replacing a 2005 act on the same issue) lists ODSs the importation or export of which requires a permit, provides detailed regulation of permitting procedures, and sets quotas for importation of ODSs in the period 2018–2030 and quota allocation procedures.

#### Nature protection

In 2016, new editions of the 1997 Law on Protection and Use of Flora and 1997 Law on Protection and Use of Fauna were approved. The 2016 Laws include a detailed description of the relevant competences of SCEEP, the State Committee on Forestry and local authorities with a view to clearly delineating them. Furthermore, both laws specify the role of the Academy of Sciences in terms of provision of various opinions as part of permitting procedures and the rights of local self-government bodies, NGOs and citizens to exercise public control and participate in the protection and use of flora and fauna. Both laws include new provisions on incentives that can be granted to individuals and legal entities that ensure the protection and rational use of flora and fauna.

In addition, the 2016 Law on Protection and Use of Flora includes new articles dedicated to botanic gardens and dendrological parks, regulates botanic collections (previously regulated by a resolution of the State Committee for Nature Protection) and regulates in greater detail the use of flora and the related permitting. The 2016 Law on Protection and Use of Fauna includes more detailed provisions on hunting and fishing and the management of hunting and fishing grounds than the previous law on the same subject.

Uzbekistan allows the extraction (including hunting) of Red Book species and collection of Red Book plants, subject to regulated procedures. Quotas for extraction of such species and collection of such plants are approved by the Cabinet of Ministers upon the proposal of SCEEP based on the opinion of the Academy of Sciences; this procedure is regulated in detail by the 2014 Resolution of the Cabinet of Ministers No. 290. In fact, this Resolution regulates all permitting procedures and fees for the extraction of flora and fauna species and damage payments for illegal extraction. It also regulates the CITES-related permitting procedures and fees.

Detailed rules on hunting and fishing are set in the 2006 Rules on hunting and fishing (2006 Order of the Chairperson of the State Committee for Nature Protection No. 27). This act did not undergo any



amendments – neither with regard to the list of species nor with regard to methods, areas and tools of hunting and fishing.

The new Regulation on the procedure for adoption, publication and updating of the Red Book (2018 Resolution of the Cabinet of Ministers No. 1034) was approved in place of a 1992 act. The Red Book is to be published every five years (previously, every 10 years). A novelty is that private individuals and legal entities can initiate the inclusion of new species in the Red Book.

With regard to protected areas (PAs), most significant amendments to the 2004 Law on Protected Natural Territories were made in 2014 when a dedicated section on the state biosphere reserves, national parks and interstate PAs was included in the Law. While, previously, the expropriation of PA lands for state and public needs was allowed in exceptional cases for all categories of PAs, the 2014 amendments specify that no expropriation of land of national parks is allowed under any circumstances. Other new developments in the legislation on PAs include the Regulation on procedure of developing protected area management plans (2012 Resolution of the State Committee for Nature Protection No. 3) and new rules for access to and payments for visiting PAs (2018 Resolution of the Cabinet of Ministers No. 13). In addition, model regulations for several types of PAs were approved to facilitate their management and protection (2018 Resolution of the Cabinet of Ministers No. 339).

### Forests

In 2018, the new edition of the 1999 Law on Forests was adopted. Unlike the previous version, the new edition includes definitions of concepts used (e.g. “forest” can only mean trees, bushes and other natural objects on the lands of the forest fund) and defines the main directions of the state policy on forest management. Similarly to the 2016 editions of the laws on flora and fauna, it delineates the responsibilities of the Cabinet of Ministers, State Committee on Forestry, SCEEP and local authorities and specifies the roles of local self-government bodies, NGOs and citizens to exercise public control and participate in various activities on the protection, afforestation and use of forests. The 2018 Law lists measures on forest protection, some of which are new. It regulates afforestation and forest restoration activities in much more detail.

The 2019 Decree of the President No. 5742 and 2019 Resolution of the President No. 4424 allow the leasing of forest fund lands to the citizens of Uzbekistan and agricultural enterprises for a period up to 50 years

based on investment contracts or public–private partnerships (PPPs).

### Subsoil and soil

By way of 2017 amendments to the 2002 Law on Subsoil, its section on rational use and protection of subsoil was enhanced with requirements for activities on extraction of widespread mineral deposits. The 2018 amendments to the Law removed the obligation of subsoil users to suspend the excavation or extraction works in the event that they find archeological objects.

More detailed environmental requirements to mining are stated in the 1997 Uniform rules for subsoil protection during the mining of minerals (1997 Resolution of the Cabinet of Ministers No. 20). The rules include provisions on the design of mining projects, exploitation, treatment of minerals, and post-mining rehabilitation of land and water bodies. Mining of mineral deposits in PAs (even in state strict nature reserves (zapovedniks)) is allowed subject to respective approval procedures. There are no provisions on financial or other guarantees for post-mining rehabilitation. No opportunities for alternative land rehabilitation exist in the legislation. There are some requirements on the conservation of fish species but, other than these, the document does not pay enough attention to biodiversity conservation and mining waste.

A new regulation on soil assessment works and approval of their results (2013 Resolution of the State Committee on Land Resources, Geodesy, Cartography and State Cadastre No. 2521) was approved in place of a 1999 act. In 2018, amendments to the Code on Administrative Liability introduced the responsibility on land owners, users and tenants (even those holding a land plot of less than 1 hectare) in the event of non-performance of mandatory measures to improve and protect irrigated land and increase soil fertility.

The Regulation on the development and rehabilitation of protective forest plantations to combat wind erosion of irrigated lands and prevent the sanding of water infrastructure (2018 Resolution of the Cabinet of Ministers No. 422) is a new act that regulates forest planting activities on irrigated lands. The Regulation is exemplary in terms of outlining the approaches to afforestation adapted to the natural and climatic conditions of Uzbekistan.

### Waste

The most significant amendments to the 2002 Law on Waste, introduced in 2018, clarified several terms on

waste management with the overall aim of moving the country towards more modern regulation and practices in this area. The 2018 Decree of the President No. 5580 changed the institutional structure for solid waste management and the payment system for waste management services. The Rules for provision of services on collection and removal of solid and liquid municipal waste (2019 Resolution of the Cabinet of Ministers No. 95) and Rules for the placement and operation of infrastructure facilities for sanitary cleaning and municipal waste management (2018 Resolution of the Cabinet of Ministers No. 787) further regulate these issues.

### Water

The amendments introduced in 2011 to the 1993 Law on Water and Water Use concern the protected water bodies. They expand the list of grounds for protection with environmental, aesthetic, recreational and sanitary criteria.

Since 2018, consumers are to prepay the costs of water supply and sanitation services (2017 Decree of the President No. 5241; 2018 Resolution of the Cabinet of Ministers No. 950). This measure should enhance the financial sustainability of services and result in better quality of service provided.

The 2018 Resolution of the President No. 3823 sets the new rates for the water resources use tax. Compared with the previous acts, there is a significant increase in rates for industrial enterprises (by more than three times) and for car washing stations (by 10 times) (table 3.5).

The 2017 Resolution of the President No. 3286 was adopted to prevent illegal extraction of sand and gravel from riverbeds under the cover of sediment control and bank stabilization works, since some 228 illegal works of this kind were discovered in 2017. The Resolution clearly specifies the organizations empowered to perform sediment control and bank stabilization works and introduces new control mechanisms in this area.

There have been no amendments to the 1999 Law on the Safety of Hydrotechnical Installations since 2010. The subsidiary legislation was enhanced with adoption of the Rules on the safety of hydrotechnical installations (2018 Order of the Minister of Emergency Situations No. 3039).

### Other

The Law on Nature Protection has a provision on mandatory and voluntary environmental insurance,

but no subsidiary legislation on environmental insurance exists. The Classification of Insurance Activities (2002 Resolution of the Cabinet of Ministers No. 413), which lists all types of insurance, does not include environmental insurance.

Green public procurement is not part of the legislation (2018 Law on Public Procurement).

Genetically modified organisms (GMOs) are mentioned in some subsidiary legislative acts on pharmaceuticals and in several general technical regulations devoted to the safety of food products but are not regulated at the level of laws.

Noise, vibration and electromagnetic fields are regulated through sanitary norms and standards (e.g. 2009 SanPiN No. 0267-09 on acceptable noise levels inside residential and public buildings and in residential areas).

Legislation dedicated to climate change is at an early stage of development. Some aspects are included in the legislation on energy, emergencies and monitoring.

There is no framework legislation dedicated to chemicals management. Rather, certain aspects are covered by the legislation on air protection, sanitary well-being of the population, industrial safety, plant protection, transport and mining.

### *Environment-related provisions in sectoral legislation*

Since 2010, some efforts have been applied to introduce environment-related provisions in the legislation covering the economic sectors. However, these efforts have been largely fragmented, apart from in the energy sector, where a more focused effort on energy efficiency is noticeable. In addition, Uzbekistan has been quite active in introducing national standards in fields of environment and energy based on ISO standards – a useful measure for greening the economic sectors.

### Energy

The 2019 Law on the Use of Nuclear Energy for Peaceful Purposes regulates the procedures of establishment and operation of nuclear installations and storage facilities for nuclear materials and radioactive waste. The key regulatory tool is the “safety expertise for nuclear facilities”. However, the Law does not clarify the relationship of this tool with SEE. According to the Law, citizens and NGOs have the right to visit nuclear facilities and storage facilities

for educational purposes. The Law requires the adoption of a large number of regulatory acts, where various procedures, including those related to permitting, will be defined.

The 2015 amendments to the 1997 Law on Rational Use of Energy significantly expanded the range of enterprises subject to energy audits: the threshold for mandatory energy audits was reduced from 6,000 tons of reference fuel as total annual energy consumption to 2,000 tons.

The 2019 Law on the Use of Renewable Energy Sources provides for state support to stimulate the use of RES and covers regulation of tariffs for energy produced from RES (chapter 12).

Following the launch of production of energy-saving lamps by several enterprises in Uzbekistan, in 2015, the Government banned the sale of incandescent lamps over 40W as of 2017 (2015 Resolution of the Cabinet of Ministers No. 299).

The 2017 Resolution of the President No. 3379 introduced, as of 2018, differentiated (by the time of day) tariffs for energy consumers with a connected capacity of 750 kVA and above, except budget-funded organizations and pumping stations. Furthermore, the Resolution stipulates that, as of 2022, all state bodies and organizations will be disconnected from centralized supply of hot water and are obliged to use solar water heating installations for hot water supply and energy-saving lamps for lighting.

The legal framework for energy service contracts has been set with the adoption of 2018 Resolution of the Cabinet of Ministers No. 551.

### Transport

Uzbekistan announced the introduction of a ban on the import of motor fuels of classes below Euro-3 from 2020 and below Euro-4 from 2023 (2019 Decree of the President No. 5863).

The 2019 Resolution of the President No. 4230 exempts from customs fees, until the end of 2021, railway cars and certain freight transport vehicles that are less than four years old, with a view to renewing the transport fleet.

The Rules for carriage of freight by road transport (2014 Resolution of the Cabinet of Ministers No. 213), as amended in 2018, requires that open vehicles carrying construction materials, industrial goods and other bulk goods cover the cargo with a tarp or dense material. In addition, the entry of vehicles from

construction sites onto public roads is not allowed without prior washing of the vehicle's body and wheels.

Several new general technical regulations have been adopted to increase transport safety and better protect people and the environment: "On safety of road vehicles operating on CNG, liquefied petroleum gas or on a mixture of diesel and gaseous fuels" (2015 Resolution of the Cabinet of Ministers No. 326); "On the safety of railway transport in technical use" (2012 Resolution of the Cabinet of Ministers No. 192); and "On the requirements for motor and aviation gasoline, diesel and marine fuel, jet fuel and fuel oil" (2017 Resolution of the Cabinet of Ministers No. 931).

A new edition of the 1999 Law on Road Safety was approved in 2013. The new edition states among the main principles of road safety the priority of human life and health, protection of the rights and interests of the population and environmental protection. The new version is exemplary in terms of providing opportunities for citizens, local self-government bodies and NGOs to initiate measures to improve road safety.

### Industry

There have been no significant amendments to the 2006 Law on Industrial Safety of Hazardous Production Facilities since 2010. However, the legislation on industrial safety has been enhanced with adoption of the new Regulation on organization of the industrial safety expertise and issuance of its conclusions (2018 Resolution of the Cabinet of Ministers No. 784) in place of 2009 rules on the same issue. No particular legislative steps have been taken to stimulate the greening of the industrial sector.

### Agriculture

The 2019 Resolution of the President No. 4239 aims to promote agricultural cooperatives in fruit and vegetable production. Significantly, this Resolution gives such cooperatives the freedom to choose/change which agricultural crops to cultivate.

Cotton production is fully regulated (e.g. 2018 Resolution of the Cabinet of Ministers No. 1037 on forecasted volume of raw cotton production and distribution of lands by cotton type). The 2018 Resolution of the President No. 4087 facilitates widespread use of drip irrigation for raw cotton production. Raw cotton producers can receive subsidies to introduce drip irrigation technology (8 million sum/ha), as well as support to partially cover credits to purchase and repair drip irrigation systems.

Certain equipment for drip irrigation systems is exempted from customs duties in 2019–2020.

### Housing

The 1998 Housing Code and the 1998 Land Code, and their enforcement are at stake in the long-standing issue with expropriation of land plots and demolition of houses for state and public needs in Uzbekistan. A number of disputes are related to violation of compensation rules, which envisage the provision of alternative housing of equivalent value in compliance with social norms (16 m<sup>2</sup> per person) or payment of the market value of the expropriated property together with an entitlement to a land plot. A 2018 amendment to the Housing Code reduces the list of persons entitled to compensation to property owners only, thus excluding members of the owner's family or other people residing with the owner. In early 2019, the Government announced that, starting from mid-2019, owners of private houses and buildings will be able to privatize land plots on which their buildings are located (2019 Decree of the President No. 5623). The Law on Privatization of Non-Agricultural Land Plots was adopted in May 2019 and is to enter into force in March 2020. If implemented, this measure may provide better safeguards vis-à-vis currently flexible provisions of the 1998 Land Code on expropriation of land plots for public needs.

A positive development in the housing legislation is the adoption of a methodology for organization of recreational parks and green areas (2018 Resolution of the Cabinet of Ministers No. 671). Apart from regulating the requirements for development of recreational parks and green areas (urban forests, gardens, pedestrian boulevards), it aims to attract PPPs in this area.

Another positive development is the mandatory requirement coming into force in 2020 (2018 Decree of the President No. 5577) that all new housing shall have energy-efficient and energy-saving equipment and undergo an energy audit or receive BREEAM (Building Research Establishment Environmental Assessment Method) or LEED (Leadership in Energy and Environmental Design) certification.

A new code on urban construction is under development to replace the 2002 code, and an intense process of revising the building standards, norms and rules is ongoing.

### Tourism

The development of legislation on tourism has been very intensive since 2018, with key measures taken to

ease the entry requirements and improve the logistical attraction of the country for foreign tourists. However, the 1999 Law on Tourism does not include any environmental requirements. As at March 2019, a new law on tourism is under preparation.

The 2018 Resolution of the Cabinet of Ministers No. 13 “On some issues of regulating the visits to protected areas” includes licensing and certification requirements for legal entities intending to develop environmental and other tourism in PAs. It also approves model rules for visitors in PAs.

The 2018 Resolution of the Cabinet of Ministers No. 978 “On measures to develop ecotourism and improve allocation of land plots in river protection zones of water reservoirs” lists 18 water reservoirs where land in river protection zones can be allocated to develop ecotourism and infrastructure for ecotourism. However, only 16 water reservoirs are suitable for recreation.

The 2019 Resolution of the Cabinet of Ministers No. 347 aims to facilitate tourism development in Aydar-Arnasay Lakes System. It provides for the development of roads and other infrastructure and organization of fish markets, along with measures to strengthen environmental inspections in the area through better equipment and increased staffing.

## **1.2 Policy framework**

### *Strategic planning system*

The overarching policy framework in Uzbekistan is provided by the 2017 Action Strategy on Five Priority Directions for Development for the period 2017–2021 (2017 Decree of the President No. 4947), also known as the national Action Strategy. This is a midterm planning document. As at March 2019, no valid long-term strategic document exists; work is under way to develop a concept of socioeconomic development until 2030.

As at March 2019, Uzbekistan does not have a law on strategic planning, but a draft law on this issue is under preparation. Rules on development and financing of “state development programmes” are in place to regulate the elaboration of this type of document (2017 Resolution of the President No. 3437).

With the national Action Strategy on top, the national policy framework also includes state programmes, comprehensive programmes, programmes, concepts,



roadmaps, action plans, “measures”<sup>4</sup> and several categories of strategic documents in the area of spatial planning. Except for state programmes, which are approved by the President only, no particular rules can be identified with regard to who adopts which category of documents.

Most strategic documents include provisions specifying the amounts and sources of financing for their implementation. Grants from foreign donors and other non-budgetary funds are considered as cofinancing sources for implementation and are included as such in the texts of strategic documents, but the state budget is clearly the major funding source for implementation of all strategic documents.

In the case of most strategic documents, responsibilities for implementation are clearly defined and not only the names of institutions but even the names of governmental officials responsible for each measure are specified. Strategic documents usually include provisions on monitoring and reporting, but these are not sufficiently elaborated. Implementation reports are produced but never appear on the public authorities’ websites. Limited information on implementation of strategic documents is channelled to the media. Few strategic documents include information on implementation of earlier strategic documents on the same subject matter.

Until recently, strategic documents in Uzbekistan rarely included quantitative indicators of implementation. This is now changing and indicators, including rankings under international indexes, are increasingly used. Nevertheless, there is much room for improvement in terms of meaningfully using the indicators. For example, currently, a target value is often indicated with no indication of the baseline value, or a target value is indicated that is in fact already achieved, or a percentage change is indicated without the actual values that lie behind it.

Another issue, which is peculiar to Uzbekistan, is that important strategic documents are requested to be produced within very short time frames (e.g. in only three months), which jeopardizes their quality.

#### Action Strategy on Five Priority Directions for Development for the period 2017–2021

The 2017 Action Strategy identifies priority steps in five areas: (1) strengthening the State and society; (2)

rule of law and reform of the judicial system; (3) development and liberalization of the economy; (4) social sector development; (5) safety, religious tolerance and interethnic consensus, and foreign policy.

Environmental issues are not really prominent in the Action Strategy, though they are present under various sections. Environmental security and waste management are mentioned under area (4). Prevention of environmental problems is referred to under area (5). Mitigating the impacts of climate change and drying out of the Aral Sea and resource-efficient technologies are mentioned under area (3).

The Roadmap for Structural Reforms for the period 2019–2021 (2019 Decree of the President No. 5614) names major focus areas of reforms in support of the implementation of the Action Strategy. In the environmental area, it prioritizes:

- Development of an integrated environmental database;
- Implementation of the green economy approach;
- Drafting an environmental code;
- Public access to relevant data such as reports and summary information on inspection activities;
- Developing a solid waste management strategy for the period 2019–2028;
- Strengthening economic mechanisms of environmental protection by introducing extended producer and importer responsibility responsibility.

Annual state programmes are approved for implementation of the Action Strategy.

#### *Strategic documents on green economy*

The Strategy for Transition to Green Economy for the period 2019–2030 (2019 Resolution of the President No. 4477), adopted in October 2019, is a framework document that largely restates the provisions of existing sectoral documents related to the greening of economic sectors and resource efficiency. The adoption of this framework document is important because it recognizes green economy as a key strategic area for development of the country. Annual action plans will be developed to facilitate implementation of the Strategy (chapters 3 and 7).

combination of institutional changes (procedural norms) and legal (material) norms and may contain a roadmap or a programme of measures for a given issue.

<sup>4</sup> “Measures” are documents approved by either the Cabinet of Ministers or the President that include priority steps for a sector or a specific issue (e.g. road safety). A decree or a resolution entitled “On measures ...” usually includes a

*Strategic documents on the environment*Concept on Environmental Protection until2030

Approved in October 2019, the Concept on Environmental Protection until 2030 (2019 Decree of the President No. 5863) is a totally new document for Uzbekistan that sets *long-term goals* in environmental protection and measures to achieve them.

The Concept provides for measures in the following areas: global environmental issues and the development of international cooperation; desertification and land degradation; water conservation; air protection; conservation of biological resources and increase in forest cover; industrial waste; greening the economy; economic mechanisms of environmental management; state environmental control; SEE and eco-certification; environmental monitoring; science; participation of civil society in environmental protection and the creation of a continuous system of environmental education. Part of the tasks and activities provided for by the Concept reflect tasks and activities already provided for in previously approved documents, but some of the tasks and activities are new. This is especially true for measures envisaged under air protection, industrial waste, greening the economy, state environmental control, SEE and public participation.

Among others, target indicators for 2030 include:

- Bringing the area of forest plantations in the Uzbek part of the Aral Sea to 60 per cent of its territory;
- Improving the efficiency of wastewater treatment up to 80 per cent;
- An increase in the forest fund lands covered by forests to 4.5 million hectares;
- Increase in the area of protected natural territories of categories I–V to 12 per cent;
- Bringing the coverage of the population with services for the collection and disposal of municipal solid waste (MSW) to 100 per cent.

The implementation of the Concept is expected through the adoption of “roadmaps” for a three-year period. The roadmap for the period 2019–2021 (2019 Decree of the President No. 5863) contains a list of 41 activities.

Programmes of actions on environmental protection

Strategic planning on environmental issues has been based on five-year programmes of action. By the end of 2012, 71 of 78 activities envisaged by the 2008 Programme of Actions on Environmental Protection for the period 2008–2012 (2008 Resolution of the Cabinet of Ministers No. 212) were implemented. According to the then State Committee for Nature Protection, overall expenditures amounted to 376.14 billion sum, US\$427.79 million and €504,400. Good results were achieved in: modernizing the oil refineries and raising the quality of motor fuels; transfer of motor vehicles to cleaner fuels; widening the use of natural gas in motor vehicles; introduction of facilities to use flaring gas; electrifying certain parts of railways; and construction of small hydropower plants (HPPs). Furthermore, a number of measures were implemented on the strengthening of the legal framework (e.g. development of the Law on Environmental Control, adopted in 2013), public participation (e.g. establishment of a public council under the State Committee for Nature Protection in October 2011) and education (development of the Concept on Education for Sustainable Development (ESD), adopted in 2011). The drawbacks in implementation included: failure to transfer some environmentally hazardous facilities from water protection zones to other areas; poor effectiveness of measures to decrease air emissions in Almalyk, Nukus, Tashkent and Chirchik; problems with water quality monitoring in small rivers; and poor control over municipal wastewater treatment facilities in several towns.

The 2013 Programme of Actions on Environmental Protection for the period 2013–2017 (2013 Resolution of the Cabinet of Ministers No. 142) included measures on: reduction of air, water and land pollution; improved environmental monitoring; greening the economic sectors; rehabilitation of the environmental situation in the Aral Sea region and other environmentally affected areas; provision of safe drinking water, sanitation and wastewater treatment; development and extension of the PA network; and improvement of legislation, environmental education and ESD. It explicitly mentioned green economy.

The 2013 Programme envisaged 78 activities. Successes in implementation include the afforestation and land reclamation works undertaken on 90,000 ha of the dried bed in the Aral Sea region. Problems in implementation were encountered with completing the reconstruction of some wastewater treatment plants (WWTPs) and delays with reconstruction of treatment facilities of the Ferghana Oil Refinery. As at mid-

2018, other non-completed activities included: expansion of Navoiy TPP by constructing the second 450 MWt combined-cycle facility; construction of the associated gas degassing and utilization unit at Shurtaneftegaz facilities; modernization and reconstruction of main aggregates of the Fergana and Bukhara oil refineries; and publication of two remaining volumes of the Red Book. Also, the development of Pskom Nature Reserve as a core zone of Ugam-Chatkal State Nature Park did not proceed as planned, despite a relevant study having been prepared by the Academy of Sciences.

The positive aspect of five-year programmes of action on environmental protection is that they clearly outlined measures and responsibilities and facilitated allocation of significant funding for environmental protection measures. No such programme exists for the post-2017 period.

#### Aral Sea-related policy documents

The 2015 Comprehensive Programme of Measures related to Mitigation of the Consequences of the Aral Disaster, Rehabilitation and Socioeconomic Development of the Aral Sea Region for the period 2015–2018 (2015 Resolution of the Cabinet of Ministers No. 255) outlines the approach of the Government of Uzbekistan to tackling the consequences of the disaster in two regions – the Republic of Karakalpakstan and Khorezm Oblast. This approach provides for actions in five directions:

- Improve the management and rational use of water resources in the Aral Sea region (create local water bodies, modernize existing water management infrastructure, etc.);
- Improve health conditions (ensure stable drinking water supply, prevent respiratory diseases, enrich food products with iron, folic acid, iodine, etc.);
- Expand opportunities for employment and income generation;
- Restore ecosystems and biodiversity (create 10 new PAs covering 3.7 million ha, preserve natural water bodies and lake systems in the Amu Darya River delta, plant forests on the dry bottom of the Aral Sea, etc.);
- Modernize production and improve infrastructure to ensure socioeconomic development (refurbish existing enterprises, introduce new production facilities, etc.).

Annexes to the Comprehensive Programme include lists of projects to be implemented in the Republic of Karakalpakstan and Khorezm Oblast in these five areas.

Despite the title of the Comprehensive Programme mentioning the period 2015–2018, it contains measures with timelines until 2021 or 2022.

The 2017 State Programme on Development of the Aral Sea Region for the period 2017–2021 (2017 Resolution of the President No. 2731) is more development oriented than the 2015 Comprehensive Programme. Nevertheless, taking into account the overlapping time spans of the two programmes, their relationship is not clear. The 2017 State Programme provides for activities to create new jobs and increase employment, develop centralized water supply and increase access to safe drinking water, improve sanitation and enhance afforestation – the areas that were also prioritized under the 2015 Comprehensive Programme. The 2017 State Programme includes stronger measures on the improvement of transport, engineering and other municipal infrastructure in human settlements and on supporting the population in the area of public health. The new areas addressed by the 2017 State Programme are solid waste management, new housing construction and enhanced social support.

#### Other documents

The National Action Plan on Implementation of International Commitments on Chemical, Biological, Radiation and Nuclear Safety for the period 2018–2021 (2018 Resolution of the Cabinet of Ministers No. 968) is a new document for Uzbekistan tackling chemical and biological safety, among other matters. Its measures are aimed at prevention of illegal transport of nuclear, chemical and biological weapons, improving equipment and training of staff on chemical, biological, radiation and nuclear safety, and strengthening related export and import control procedures. The Action Plan provides for rehabilitation of uranium tailings in Tashkent and Namangan Oblasts in 2019–2020, measures to improve the registration of pesticides and mineral fertilizers, and measures to analyse the situation with regard to stockpiles of obsolete pesticides in Farkhad village of Syrdarya Oblast and the storage sites in Surkhandarya and Jizzakh Oblasts. Implementation of the Action Plan is expected to be funded primarily by international organizations and donors.

The 2010 Programme on Accelerated Development of Infrastructure, Transport and Communications Networks for the period 2011–2015 (2010 Resolution of the President No. 1446) and the 2015 Programme on Development and Modernization of Communications, Road and Transport Infrastructure for the period 2015–2019 (2015 Resolution of the President No. 2313) included measures and projects

primarily to develop the transport sector but also to expand water supply, sewerage and electricity networks, in particular in rural areas. Equipment for investment projects included in these programmes was given preferential customs treatment.

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) is the first policy document specifically targeting water supply and sanitation. It includes district- and town-level details on the infrastructure (length of networks, number of pumping stations, etc.) to be built under the Programme and the funding allocated for this by the Government and international donors. A Clean Water Fund (later transformed into the Fund for Development of Water Supply and Sanitation Systems with additional mandate to finance sewerage networks) under the Ministry of Finance was created to finance activities under the Programme. Equipment for investment projects included in this Programme is given preferential customs treatment. The 2018 Resolution of the President No. 4040 “On additional measures to develop water supply and sewerage systems” provides further strategic directions for development of the sector, such as expansion of water metering, implementation of PPPs, simultaneous construction of water supply and sewerage networks and transition to cost-recovery tariffs. The Resolution exempts companies that sign PPP agreements in the water supply and sanitation sector from all taxes and mandatory payments, except the social tax, for three years. It also includes programmes for gradual modernization and construction of wastewater treatment facilities in 20 towns.

The 2017 Set of Measures to Strengthen Control and Accounting for the Rational Use of Groundwater Resources for the period 2017–2021 (2017 Resolution of the President No. 2954) includes measures to regularize the use of groundwater and fight illegal use, as well as to ensure protection of groundwater. It follows the official inventory conducted in February–March 2017 that revealed uncontrolled abstraction from over 60 per cent of wells (of a total of 10,073 wells), whereas 59 per cent of abstracted groundwater was from non-approved groundwater reserves.

The 2019 Strategy on Municipal Solid Waste Management for the period 2019–2028 (2019 Resolution of the President No. 4291) is an attempt to introduce modern waste management by developing technically advanced infrastructure, enhancing recycling capacities, decreasing the amounts of waste going to landfills, optimizing tariff policies to achieve cost recovery tariffs and promoting the use of waste

for energy production. Its targets include 100 per cent coverage of the population by waste collection and disposal services by 2025, up from 48 per cent in 2018, and increasing MSW recycling (to 25 per cent by 2021 and 60 per cent by 2028) (chapter 10). The Strategy’s action plan includes details on specific activities, timelines, responsible bodies and financing.

The 2019 Roadmap for Development of the Protected Areas Network for the period 2019–2022 (2019 Resolution of the President No. 4247) envisages the creation of five new PAs in the Republic of Karakalpakstan (chapter 11).

The 2019 Strategy for the Conservation of Biological Diversity for the period 2019–2028 (2019 Resolution of the Cabinet of Ministers No. 484) aims at expansion of the area of protected natural territories to 12 per cent of the country’s territory by 2028 (chapter 11).

Other strategic documents on the environment include the: 2008 Plan of Actions to Ensure Stability of the Environmental Situation and Effective Use of the Aydar-Arnasay Lakes System for the period 2008–2015; 2011 Programme of State Environmental Monitoring for the period 2011–2015 (2011 Resolution of the Cabinet of Ministers No. 292); and 2016 Programme of Environmental Monitoring for the period 2016–2020 (2016 Resolution of the Cabinet of Ministers No. 273).

As at 2019, the policy framework on environmental protection does not sufficiently cover the issues of climate change, low carbon development, environmental compliance and enforcement, forest protection, soil protection and environmental noise.

#### *Strategic documents on environment at subnational level*

The 1992 Law on Nature Protection entrusts the local authorities to approve regional (territorial) environmental programmes. Similarly, the 2016 Law on the Protection and Use of Flora and 2016 Law on the Protection and Use of Fauna entrust the local authorities to approve territorial programmes on flora and fauna. The 2019 amendments to the Law on Ambient Air Protection entrust the local authorities to approve territorial programmes on air protection.

Only one subnational programme was approved, in the Republic of Karakalpakstan (Territorial State Programme of Actions on Environmental Protection for the period 2013–2017 (2013 Resolution of the Council of Ministers of the Republic of Karakalpakstan No. 135)). No other programme of this kind adopted by local authorities exists.



Programmes that target various local (primarily socioeconomic, but also environmental) issues are commonly adopted at the central government level.

*Sectoral development with a possible impact on the environment*

Integration of environment-related provisions in sectoral policies is in its early stages in the housing, infrastructure, transport, industry, tourism and health sectors and slightly more advanced in the energy sector (with regard to energy efficiency and RES) and the agricultural sector (with regard to water-use efficiency).

Energy

The 2015 Programme of Measures to Reduce Energy Intensity and Introduce Energy Efficient Technologies in Economic Sectors and the Social Sector for the period 2015–2019 (2015 Resolution of the President No. 2343) included measures to modernize district and local boiler houses, replace electric engines of water pumping stations and increase the energy efficiency of buildings. Its successes include the replacement of boilers (with more energy-efficient ones) in many public education institutions, introduction of energy-efficient street lighting and introduction of the national standards – O‘z DSt ISO 50001:2015 on energy management systems and O‘z DSt ISO 50002:2015 on energy audits.

The 2017 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 (2017 Resolution of the President No. 3012) prioritizes innovation development in RES and energy efficiency, diversification of the energy balance through production of energy from renewable and alternative energy sources, and a decrease in energy intensity. Altogether, the Programme names 810 investment projects on RES development. Intensive development of legislation on RES is envisaged. The document includes targets aimed at raising the share of renewables from 12.7 per cent (all from hydropower) of total energy production capacity in 2016 to 19.7 per cent (of which 15.8 per cent is hydropower, 2.3 per cent is solar and 1.6 per cent is wind energy) in 2025. Another target is to decrease the energy intensity of the national economy by 37.4 per cent in the period 2017–2021. The good aspect of this target is that it is broken down by large enterprises. However, the actual figures on energy intensity are not indicated – only the required percentage is.

The 2019 Comprehensive Programme for Further Development of Energy Efficiency of Economic Sectors and the Social Sector, Introduction of Energy Saving Technologies and Development of Renewable Energy Sources (2019 Resolution of the President No. 4422) sets targets for further development of RES from 10 per cent (all from hydropower) of total power production in 2018 to 25 per cent (of which 11.2 per cent is hydropower, 8.8 per cent is solar and 5 per cent is wind) in 2030. The document includes a roadmap of implementation, a list of administrative buildings of public authorities and organizations that are recommended to install solar photovoltaic (PV) installations and solar water heating devices, as well as a list of enterprises that are required to introduce, by 1 January 2023, the energy management systems in line with ISO 50001.

A short policy document, “Set of Measures to Promote Production and Use of Biogas Installations in the period 2017–2019” (2017 Resolution of the Cabinet of Ministers No. 338) aims to facilitate grants, technical assistance and access to credit in this area and achieve implementation of more than 700 biogas projects in livestock and poultry farms across the country.

The 2017 Programme for Development of the Heat Supply System for the period 2018–2022 (2017 Resolution of the President No. 2912) envisages the expansion of local boiler houses, including through domestic production of energy-efficient local boiler houses and individual in-apartment heat systems. The idea is to refrain from building new multi-apartment residences and public buildings connected to central heat supply networks and reduce the reliance on central heat supply.

The 2017 Programme of Measures for Further Development of Hydropower for the period 2017–2021 (2017 Resolution of the President No. 2947) lists 18 projects of new HPP construction and 14 projects to modernize the existing HPPs. The objective is to increase the total hydropower capacity from 1,793.9 MWt in 2016 to 3,037.8 MWt by 2025. It explicitly mentions the need for preservation of flora and fauna during the construction of hydropower facilities.

Along with the development of RES, Uzbekistan continues to extract fossil fuels. The 2017 Programme to Increase the Extraction of Hydrocarbons for the period 2017–2021 (2017 Resolution of the President No. 2822) envisages the construction of 502 new wells for extraction of natural gas and gas condensate and 216 new wells for extraction of oil in this period.

Two programmes aim at modernization of the coal industry: one for the period 2013–2018 (2013

Resolution of the Cabinet of Ministers No. 161, no longer in force) and another for the period 2017–2021 (2017 Resolution of the President No. 3054). Their primary objectives are to explore new coal reserves and increase coal extraction.

The 2018 Decree of the President No. 5484 and the Concept for the Development of Nuclear Energy in the period 2019–2029 (2019 Resolution of the President No. 4165) envisage the construction of the first NPP in Uzbekistan, with two power units, each having installed capacity of 1.2 GW (chapter 12). The Concept requires active cooperation with the International Atomic Energy Agency (IAEA) and provides for the country's accession in 2019–2020 to several conventions on nuclear safety. The Concept does not include any details on environmental monitoring or the fate of spent nuclear fuel.

### Transport

In the area of transport, previous policy documents (e.g. 2010 Programme on Accelerated Development of Infrastructure, Transport and Communications Networks for the period 2011–2015 (2010 Resolution of the President No. 1446) and 2015 Programme on Development and Modernization of Communications, Road and Transport Infrastructure for the period 2015–2019 (2015 Resolution of the President No. 2313)) included few environmental considerations. These mostly referred to electrifying parts of the railway network and modernizing the railway and road networks. The 2017 Comprehensive Programme to Improve Transport Infrastructure and Diversify External Trade Routes for Freight Transport for the period 2018–2022 (2017 Resolution of the President No. 3422) is similarly limited in terms of integration of environmental requirements. The direct environmental impacts are mostly linked to further electrification of railways. The projects included in the Comprehensive Programme to improve transport connectivity, logistics and infrastructure may bring indirect environmental benefits. However, the document does not mention and does not address air emissions from the transport sector and the sector's contribution to climate change.

The 2017 Programme for Greening the Roads, including Roads of Common Use and Streets, in the period 2018–2020 (2017 Resolution of the President No. 3262) provides funds for tree planting along the roads and streets.

The 2018 Global Status Report on Road Safety by the World Health Organization (WHO) estimates the road traffic fatality rate in Uzbekistan in 2016 to be 11.5 per 100,000 population, which is better than in

Kazakhstan (17.6) but worse than in Belarus (8.9), Germany (4.1) or Switzerland (2.7). The official estimate by the Government of Uzbekistan is 8.3 fatalities per 100,000 population. The country made a step in the right direction by adopting its first policy document on road safety – the 2018 Concept on Road Safety for the period 2018–2022 (2018 Resolution of the Cabinet of Ministers No. 377), but the document lacks any quantitative targets.

### Industry

Uzbekistan regularly approves “localization programmes” that include projects aimed at developing the production of competitive import-replacing and export-oriented products (e.g. Programme of Localization of Goods, Components and Materials for the period 2015–2019 (2015 Resolution of the President No. 2298)). The enterprises included in the “localization programmes” receive tax and customs preferences to enable them to launch the production of certain goods. Beyond economic effects, such programmes may have important environmental effects.

The 2016 Programme of Measures for Further Development of the Textile and Knitwear Industry in the period 2017–2019 (2016 Resolution of the President No. 2687) aims at increasing local production of export-oriented knitwear products based on deep processing of cotton fibre.

Boosting the local chemical industry is the purpose of the 2018 Resolution of the President No. 3983 “On measures for accelerated development of the chemical industry”. It includes targets on increasing and diversification of the production of chemicals, including a twofold increase in the production of mineral fertilizers in the period 2018–2030.

A set of measures to accelerate the development of the construction materials industry in the period 2019–2020 (2019 Resolution of the President No. 4335) aims to optimize imports and expand local production of construction materials, as well as introduce innovation and international standards in the production of construction materials.

### Agriculture

The 2012 Programme for Further Modernization, Technical and Technological Upgrade of Agricultural Production for the period 2012–2016 (2012 Resolution of the President No. 1758) focused on renewal and expansion of the use of more economically and resource-efficient equipment in

agriculture. There is no information on its impact on water or energy efficiency.

The 2018 Roadmap on Profound Reform of the Agricultural and Food System (2018 Resolution of the President No. 3671) aims to increase the effectiveness of the sector and improve food security. It has important environmental connotations, as it envisages studying the possibilities for more effective use of agricultural lands for other crops by reducing cotton and spiked cereals cultivation. It also provides for gradual expansion of mechanized harvesting of raw cotton. The Roadmap envisages the promotion of global standards for organic production and calls for increased transparency in the distribution of mineral fertilizers and fuel among agricultural producers.

The 2013 State Programme for Improvement of Land Reclamation in Irrigated Lands and Rational Use of Water Resources in the period 2013–2017 (2013 Resolution of the President No. 1958) provided for measures to improve the quality of irrigated lands, build new and repair existing irrigation infrastructure and expand drip irrigation. Information on implementation of the State Programme includes impressive numbers with regard to irrigation networks and pumping stations repaired. Implementation is reported to have resulted in a decrease of lands with strong and middle levels of saltiness by 149,400 ha and a decrease of areas with near-surface groundwater occurrence by 302,900 ha.

The 2017 Programme of Comprehensive Measures on the Development of Irrigation, Improvement of Land Reclamation of Irrigated Lands and Rational Use of Water Resources in the period 2018–2019 (2017 Resolution of the President No. 3405) provides for further measures in this area, including significant expansion of drip irrigation and introduction of alternative ways of watering cotton (mobile flexible irrigation pipes and irrigation in the furrows, shielded with perforated plastic film).

The 2019 Concept for Rational Use of Land and Water Resources in Agriculture (2019 Decree of the President No. 5742) provides for measures to stimulate the use of unused degraded agricultural lands through improving their reclamation state, fertility and water availability. It also envisages measures to identify groundwater reserves suitable for irrigation of crops. With regard to water efficiency, the Concept provides for increased energy efficiency of pumping stations and step-by-step introduction of market mechanisms in the field of water consumption.

### Forestry

The Programme of Measures for Effective Organization of Forest Management Organizations, Introduction of Advanced Scientific and Technological Measures in Forestry, Renewal of Equipment and Raising International Funds for Forestry for the period 2017–2021 (2017 Resolution of the President No. 2966) is the key policy document aimed at expediting development in the forestry sector. It has not been preceded by a similar document. The Programme provides for measures to ensure financial viability of forest management organizations, increase research and technology development on forestry and ensure training of forestry professionals.

A number of forecast indicators for the development of forestry in the period 2020–2024 are defined to cover the procurement of seeds, cultivation of medicinal herbs, creation of protective forest stands and other activities on the lands of the forest fund (2019 Resolution of the President No. 4424).

### Housing and infrastructure

The 2018 Programme “Obod Qishloq” (“Prosperous village”) (2018 Decree of the President No. 5386) is the key policy document for the building and maintenance of infrastructure and amenities in qishloqs (villages). The Programme funds construction and landscaping works, regional roads and street maintenance, street lighting, improvements in public transport (building bus stations, purchase of buses, etc.), water supply, electricity and gas supply infrastructure, repair of individual private houses and multi-apartment residences and construction and repair of schools and hospitals. The Programme also provides funds to build and repair irrigation infrastructure. Environmental considerations (water and resource use efficiency or the use of environmentally friendly construction materials) are not included in the Programme, though activities within its framework may have clear environmental benefits. A similar programme for towns is the 2018 Programme “Obod Makhalla” (“Prosperous neighbourhood”) (2018 Decree of the President No. 5467). Some measures in the “Obod Qishloq” and “Obod Makhalla” Programmes are similar to those under the 2017 Programme for Comprehensive Development and Modernization of the Drinking Water Supply and Sewerage Systems for the period 2017–2021 and the 2015 Programme for Development and Modernization of Communications, Road and Transport Infrastructure for the period 2015–2019, but they are implemented in different settlements.

The 2019 Concept to Implement the Smart City Approach (2019 Resolution of the Cabinet of Ministers No. 48) adapts the smart city approach to the context of Uzbekistan. The Concept addresses 10 areas for implementation of the smart city approach: transport, education, medicine, energy system, water supply and sanitation, utilities, construction sector, houses, khokimiyats and makhallas. The period until 2027 is mostly for conceptual and detailed planning, whereas actual implementation of automatic systems and information technologies is envisaged for the period 2028–2030. If implemented, the Concept will result in a significant increase in resource efficiency and reduction of the overall environmental footprint of urban settlements.

### Tourism

The Concept for Development of the Tourism Sector for the period 2019–2025 (2019 Decree of the President No. 5611) is the first policy document on tourism. It sets an ambitious target for tourism to account for 5 per cent of GDP by 2025 (in 2017, it accounted for 2.3 per cent). It names ecological tourism and rural tourism among 10 potentially promising tourism types. Its action plan for 2019 names among measures for 2019 the organization of protection zones in state strict nature reserves (except Surkhan and Kitab) with identification of areas for ecological tourism, and also envisages organization of the zoning of Zaamin National Nature Park. Overall, the Concept provides for major investments to develop tourism infrastructure. It does not make any particular references to environmental protection.

### Health

Increased interagency cooperation for the protection of public health, development of a healthy and safe environment, improvement of water supply and sanitation, healthy nutrition and healthy lifestyles are among the objectives of the Concept on Development of the Health System for the period 2019–2025 (2018 Decree of the President No. 5590). Unlike many other policy documents in the country, this one includes a number of quantitative targets and indicators. Moving towards sustainable health systems (reduced consumption of water and energy by health institutions, proper treatment of medical waste, etc.) is not addressed in the Concept.

The 2018 Resolution of the President No. 4063 provides for various direct measures to promote healthy lifestyles and approves the Concept to Prevent Non-Communicable Diseases, Support Healthy Lifestyle and Increase Physical Activities of the Population in the period 2019–2022. Among other

things, the Concept envisages expansion of walking paths and cycling infrastructure.

### Other

The Strategy for Innovative Development for the period 2019–2021 (2018 Decree of the President No. 5544) is the first document of this kind. Its major target is to bring Uzbekistan into the 50 top countries under the Global Innovation Index (Uzbekistan has not participated in this index in 2016–2018). The Strategy includes measures on improved financing of innovation, development of information and communication technologies (ICT), development of science, and technology transfer. The Strategy mentions effective use of resources but places no emphasis on green technology.

The 2015 Concept on Developing E-Commerce in the period 2016–2018 (2015 Resolution of the Cabinet of Ministers No. 353) and the 2018 Programme of Measures on Developing E-Commerce in the period 2018–2021 (2018 Resolution of the President No. 3724) provide for regulatory and technological measures to ease administrative barriers and develop e-commerce in the country – a direction generally considered to have lower environmental impacts than traditional shopping. However, expanding access to the Internet in rural and remote areas and enhancing access to data remain the prerequisites before more sophisticated Internet use (including e-commerce) becomes accessible to all.

Among other matters, the 2015 Programme for Development of National Infrastructure for Quality Assurance until 2020 (2015 Resolution of the Cabinet of Ministers No. 298) provides for the promotion of management systems ISO 9001, ISO 14001, OHSAS 18001 and ISO 50001 among public enterprises in Uzbekistan.

The 2017 Decree of the President No. 5066 recognizes that the key challenges of the disaster risk management system are in the areas of preparedness, disaster risk reduction, poor forecasting of disasters, insufficient awareness among the population and poor use of ICT. It approves the Programme of Comprehensive Measures to Further Improve Disaster Prevention and Response, which is focused on raising the efficiency of preparedness and response activities. The measures also include improving the structure and staff capacity of the Ministry of Emergencies, introducing ICT to Ministry activities and better equipping rescue teams.

Several policy documents were adopted to reduce the use of paper, in particular the 2010 Resolution of the



Cabinet of Ministers No. 155 that approved the Set of Additional Measures to Ensure Economizing on Paper and its Rational Use. Apart from reduction of paper consumption per se, measures aim at more efficient use of ICT and electronic documentation in governmental bodies.

#### *Towards strategic environmental assessment*

The country is not a party to the 2003 Protocol on Strategic Environmental Assessment to the ECE Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) (chapter 6). Strategic environmental assessment (SEA), as provided for in the Protocol or in Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, does not exist in Uzbekistan.

As at early 2019, the 2000 Law on Ecological Expertise provides that draft state programmes, concepts and schemes for the development of production, economic sectors and the social sector are subject to SEE (even without a clause on their potential impact on the environment). The 2018 Regulation on SEE (2018 Resolution of the Cabinet of Ministers No. 949) does not provide more detail on the SEE of this category of documents except that such SEE is to be carried out by the Centre for State Ecological Expertise. As at early 2019, policy documents such as state programmes, comprehensive programmes, programmes, concepts, roadmaps, action plans or “measures” do not undergo SEE. The only category of policy documents for which SEE is carried out is urban planning documents.

In 2018, at the request of Uzbekistan, ECE experts prepared two reviews of the national legislation (one vis-à-vis the provisions of the Espoo Convention and the other vis-à-vis the provisions of the Protocol on SEA) (chapter 6). They have also prepared proposals on improving the legislative framework on environmental assessment, including opportunities for the introduction of SEA. This exercise has greatly facilitated awareness about the concept of SEA in Uzbekistan. Nevertheless, key challenges for the introduction of a fully fledged SEA system include raising understanding and acceptance of the SEA tool among the sectoral planning authorities.

### **1.3 Sustainable Development Goals**

#### *Millennium Development Goals*

The experience with the Millennium Development Goals (MDGs) in Uzbekistan has several aspects that have relevance for the country’s approach to the

Sustainable Development Goals. First, Uzbekistan has adapted the global MDGs to its national circumstances by setting national targets and indicators – an approach followed in the period 2016–2018 for the Sustainable Development Goals. Secondly, MDGs were referred to in a number of policy documents in Uzbekistan throughout the entire MDG implementation period, which made them well integrated into the national development agenda.

Uzbekistan has been tracking progress with the achievement of the national MDG indicators, although this was not a regular activity. No specific MDG-related action plan was developed at the start of the implementation process, but the Government has adopted an action plan for implementation of the MDGs for the period 2011–2015 (called the Set of Additional Measures to Implement the Millennium Development Goals in the period 2011–2015 (2011 Resolution of the Cabinet of Ministers No. 21)).

Official reports on MDGs implementation were issued in 2006 and 2015. The key challenge identified in the 2015 report is reducing disparities in MDGs implementation among various groups in the population, including the rural and urban population, men and women, young people, people with disabilities and others. This challenge remains relevant for the achievement of the Sustainable Development Goals.

#### *Defining the national Sustainable Development Goals*

##### Process

Unlike many other countries, Uzbekistan has commenced the process of defining the national Sustainable Development Goals and targets rather early. The United Nations Country Team played a crucial role in getting the process started but the Government has undoubtedly taken full control of the process from the very beginning. The United Nations Country Team has then taken a support/advisory role. Important support to the process was provided by the joint United Nations–World Bank Mainstreaming, Acceleration and Policy Support (MAPS) mission, which visited the country in April 2018. The MAPS mission was particularly useful in identifying the challenges and actions needed on the monitoring and evaluation side, in addition to identifying the three acceleration areas for the country’s progress in implementation of the 2030 Agenda for Sustainable Development (towards more efficient and accountable governance systems; social policy for inclusive development; towards sustainable and resilient natural resources management).

In February 2016, the Cabinet of Ministers (2016 Decision of the Cabinet of Ministers No. 111) approved the composition of the Coordination Council for the Development and Implementation of Measures on Adaptation of the United Nations Sustainable Development Goals. It also approved the composition of six working groups to develop the national Sustainable Development Goals and targets in six thematic areas. The Decision assigned global targets among the working groups and included an action plan with timeframes and responsibilities for the entire process of defining the national goals. The Ministry of Economy coordinated the overall process.

The Coordination Council's membership was purely governmental. Academic institutions (all financed by the Government) were involved in the process of defining the national targets from the outset as part of the expert groups. Some expert groups also included the National Association of NGOs, the Committee of Women of Uzbekistan and the Ecological Movement of Uzbekistan. However, in Uzbekistan, these organizations are supported by the Government and closely linked to the Government (e.g. the Chair of the Committee of Women of Uzbekistan is ex officio the Deputy Prime Minister of the country, while the Ecological Movement of Uzbekistan was allocated by the legislation 10 per cent of seats in the lower chamber of the national parliament (Oliy Majlis) during the period 2008–2019).

Public consultations on the list of national Sustainable Development Goals were organized twice – in February–March 2017 and in May 2018 – by posting the draft resolution for adoption of national goals on the governmental portal (<https://regulation.gov.uz>) for comments; two and four comments were received, respectively. Overall, the involvement of and consultations with civil society in the process of defining the national Sustainable Development Goals were limited. Furthermore, there was no involvement of local authorities – which, if it did occur, would ensure that the regional and urban/rural differences are taken into account in the definition and achievement of the national goals.

The work to define the national Sustainable Development Goals resulted in the adoption of national goals and targets by the Cabinet of Ministers in October 2018 (2018 Resolution of the Cabinet of Ministers No. 841).

#### National goals

The list of national Sustainable Development Goals includes 16 national goals (of 17 global goals, with Goal 14 on oceans excluded) and 125 national targets.

In many cases, the adaptation of global targets basically meant the use of terms and concepts common for Uzbekistan in the national targets. In some cases, the adaptation was driven by political considerations; however, some topics that had previously been too sensitive for the Government, such as domestic violence, remittances or fossil fuel subsidies, were integrated into the national targets without changes.

A general observation on the entire set of national targets is that, while they adapt the global targets to Uzbekistan's context in terms of the language or concepts used, with very few exceptions, they do not additionally assign the national target values to the global targets. When target values are part of the global targets (e.g. achieve “universal” access, or “reduce by half”), these target values have largely been kept in the national targets. The advanced global deadlines (by 2020) have been dropped in several national biodiversity-related targets (15.1, 15.2, 15.5, 15.8 and 15.9). In some other cases, the advanced global deadlines were delayed (e.g. from 2020 to 2025 in target 3.6 on road accidents) or postponed from 2020 to 2030 (in target 6.6 on water-related ecosystems and in target 12.4 on sound management of chemicals and all wastes) in the equivalent national targets.

For environment-related targets, the lack of national equivalents for global targets 12.3 (By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses) and 15.6 (Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed) is clearly noticeable. It is not clear why target 15.a about financial resources for biodiversity was nationalized while target 15.b about financial resources for forest management was not; global indicators for these two targets are the same but the targets themselves are different. For some national targets, significant changes in wording are observed (e.g. target 12.7 where sustainable public procurement is narrowed to application of ecological standards in public procurement or target 15.9 narrowed down to national strategies and programmes, omitting local ones.) Also, some global targets were not nationalized at all, perhaps because their indicators repeat the indicators under other targets. This is the case, in particular, for several targets under Goal 13 on climate change and for target 12.2 (By 2030, achieve the sustainable management and efficient use of natural resources).

### *Institutional set-up for coordination of implementation and monitoring*

In addition to defining the national Sustainable Development Goals, the 2018 Resolution of the Cabinet of Ministers No. 841 approved the institutional architecture for their implementation and monitoring and a roadmap on implementation of the national goals.

The Coordination Council on Implementation of National Sustainable Development Goals, headed by the Deputy Prime Minister, is vested with three major tasks:

- Organize the work of ministries and agencies to implement the national goals and targets and ensure intersectoral coordination and an integrated approach to the achievement of the goals;
- Ensure the inclusion of the national goals and targets during the development of sectoral, regional and target programmes, strategies and concepts;
- Review the reports of ministries, agencies and working groups on implementation of the national goals and targets.

The composition of the Coordination Council includes ministers and vice-ministers plus the Committee of Women and the Republican Council for Coordination of Local Self-Government Bodies. In other words, the Coordination Council is purely governmental. International organizations are not part of it. The Ministry of Economy and Industry serves as the secretariat of the Coordination Council.

The Coordination Council is supported by six expert groups (on economic well-being, social protection, public health, education, environment and good governance). The composition of the expert groups (approved at the first meeting of the Council in December 2018) is largely governmental, with several pro-governmental organizations present, such as the Committee on Women, Union of Youth, Federation of Trade Unions, Independent Institute for Monitoring the Development of Civil Society, and the Chamber of Commerce and Industry. The expert group on environment is led by the Chairperson of SCEEP. The tasks of the expert groups are to: ensure intersectoral coordination and an integrated approach to implementation of national goals; prepare concept papers on each goal and prepare annual action plans; and ensure overall monitoring of national goals.

An additional piece of the institutional architecture for implementation and monitoring of the national Sustainable Development Goals is the Interagency

Working Group on national indicators, led by the State Committee on Statistics. Its composition was approved in December 2018 at the first meeting of the Coordination Council.

### *Sustainable Development Goals in the national policy framework*

The adoption of the list of national Sustainable Development Goals by a resolution of the Cabinet of Ministers is in itself a measure of inclusion of the goals in the national policy framework. At the same time, while the national Sustainable Development Goals derive from and build on the national strategic documents, their better integration in the national policy framework is yet to be achieved. Quantitative targets and indicators are largely absent in strategic documents in Uzbekistan. Therefore, explicit integration of the national Sustainable Development Goals and their indicators into the various national strategic documents is an important direction for development. Such integration has already started in new policy documents (e.g. the Concept on Development of the Health System for the period 2019–2025 and the Strategy for Transition to Green Economy for the period 2019–2030). Another important aspect is to demonstrate clear linkages between the national Sustainable Development Goals and the 2017 Action Strategy on Five Priority Directions for Development in the period 2017–2021 and clearly integrate the national Sustainable Development Goals into this Strategy's successor document.

### *Indicators*

In February 2019, the Interagency Working Group on national Sustainable Development Goals indicators, led by the State Committee on Statistics, completed its work on the list of indicators and submitted it to the Coordination Council on Implementation of National Sustainable Development Goals for approval. The list of 206 indicators was approved in March 2019. The United Nations Country Team is encouraging the Government to foresee keeping the list of indicators under annual review. The list specifies the indicators but does not include the baseline, midterm and final values to be achieved, although baseline data are actually available for about 70 indicators.

Limited data availability is commonly recognized as the key constraint to Uzbekistan's rapid progress in implementation of the Sustainable Development Goals, with major concerns such as limited access to official data, issues with reliability and quality of official data, lack of data disaggregated by vulnerability criteria and weak intersectoral data

coordination. It is therefore laudable that the 2019 Programme of State Statistical Activities for 2019 (2019 Resolution of the Cabinet of Ministers No. 91) explicitly mentions the monitoring of Sustainable Development Goals and the 2019 Concept to Conduct the Population Census in 2022 (2019 Decree of the President No. 5655) recognizes the challenges related to Sustainable Development Goals indicators.

With regard to environment-related indicators, the most significant drawback is that Uzbekistan did not nationalize the global indicator 3.9.1 (Mortality rate attributed to household and ambient air pollution) (chapter 8). Despite difficulties in producing this indicator, disclosure of data on air-pollution-related mortality is important for taking adequate policy measures to improve air quality.

#### *Reporting and awareness*

In February 2019, the State Committee on Statistics launched a section for Sustainable Development Goals on its website (<http://nsdg.stat.uz/>). It includes national Sustainable Development Goals and targets, names the national indicators and presents infographics on the situation in Uzbekistan with regard to some national targets.

The 2018 Resolution of the Cabinet of Ministers No. 841 in its Annex III mentions the preparation of reports on national Sustainable Development Goals starting from 2019. The frequency of national reporting is not set; it will depend on data availability and will vary across the indicators.

Uzbekistan took a decision to prepare a voluntary national review (VNR) and present it at the High-level Political Forum on Sustainable Development in 2020.

The 2018 Resolution of the Cabinet of Ministers No. 841 entrusts the National Television and Radio Company, the National Information Agency and other mass media to regularly cover the national Sustainable Development Goals. In November 2018, the Government, United Nations and World Bank officially launched the national Sustainable Development Goals and the corresponding government resolution. The United Nations Country Team is also implementing an advocacy and awareness-raising campaign on the Sustainable Development Goals.

## **1.4 Institutional framework of governmental authorities for the environment and green economy**

### *State Committee on Ecology and Environmental Protection*

SCEEP is the governmental body in charge of ecology, environmental protection and rational use of natural resources. Its tasks include state environmental control, interagency coordination on environmental issues, state environmental monitoring, environmental education, prevention of environmental offences, and cooperation with civil society on environmental issues. Its areas of work include biodiversity conservation, PAs, air protection, protection of subsoil and waste management.

SCEEP participates in policy development and has regulatory and inspection functions. Unlike in Western European countries, there is no separation of these functions in Uzbekistan and this is common to most areas, not only the environment.

According to the legislation of Uzbekistan (2003 Law on the Cabinet of Ministers and 2019 Regulation of the Cabinet of Ministers (2019 Resolution of the Cabinet of Ministers No. 242)), there are no formal differences between the status of a “state committee” and that of a ministry, in terms of either their functions and powers or the manner of appointment/dismissal or powers of their heads. In other words, the manner of appointment and the powers of the chair of SCEEP are equal to those of a minister. Reportedly, the informal status of SCEEP within the Government is quite high.

#### Institutional changes

In April 2017, the State Committee for Nature Protection was transformed into the State Committee on Ecology and Environmental Protection (SCEEP) (2017 Decree of the President No. 5024), with the following changes in terms of its mandate and structure:

- The reformed State Committee is subordinated to the Cabinet of Ministers (unlike the previous one that was subordinated to the Oliy Majlis – the status that allowed it to be genuinely independent from the pressure and influences of other competing interests). The Chair of the reformed State Committee is appointed by the President, whereas the Chair of the former State Committee was appointed by the Oliy Majlis;
- The reformed State Committee is assigned new responsibilities on municipal waste management, and:



- A new structure was created inside the central apparatus of the State Committee: the Inspectorate for Control in the field of Waste Generation, Collection, Storage, Transportation, Disposal, Recycling, Burial and Processing, together with its offices in respective territorial bodies of the State Committee in the Republic of Karakalpakstan, oblasts and Tashkent City;
- State unitary enterprises (SUEs) “Toza Khudud” were created under the Committee of the Republic of Karakalpakstan and the departments of ecology and environmental protection of oblasts and Tashkent City with branches in towns and districts (based on former municipal waste services departments under district khokimiyats);
- The Republican State Inspectorate for the Protection and Rational Use of Fauna and Flora of the State Committee for Nature Protection was transformed into the Inspectorate for Control in the field of Protection and Use of Biodiversity and Protected Areas under the State Committee on Ecology and Environmental Protection, and the regional branches were created accordingly;
- The Fund for Ecology, Environmental Protection and Waste Management was created on the basis of the republican and territorial nature protection funds.

In October 2018, further changes were introduced to the structure of SCEEP (2018 Resolution of the President No. 3956):

- The Inspectorate for Control in the field of Protection and Use of Biodiversity and Protected Areas and the Inspectorate for Control in the field of Waste Generation, Collection, Storage, Transportation, Disposal, Recycling, Burial and Processing were merged into the Inspectorate for Control in the field of Ecology and Environmental Protection, with respective changes in territorial bodies;
- A new Republican Association of Specialized Sanitary Cleaning Enterprises was established under SCEEP, with all waste management enterprises (i.e. SUEs “Toza Khudud” in the Republic of Karakalpakstan and oblasts and their branches in towns and districts, SUE

“Makhsustrans” and its district branches, and state enterprise (SE) “Chiqindilarni qayta yuklash va utilizasiya qilish”) subordinated to it;

- An SUE “Centre for Environmental Information, Introduction of Information and Communication Technologies and Multimedia” was created on the basis of the Centre for Implementation and Development of Information and Communication Technologies and Billing System.

In March 2019, additional changes were introduced to the structure of SCEEP (2019 Resolution of the President No. 4247), connected with the transfer to SCEEP of five state strict nature reserves (zapovedniks) and one biosphere reserve, previously under the State Committee on Forestry.

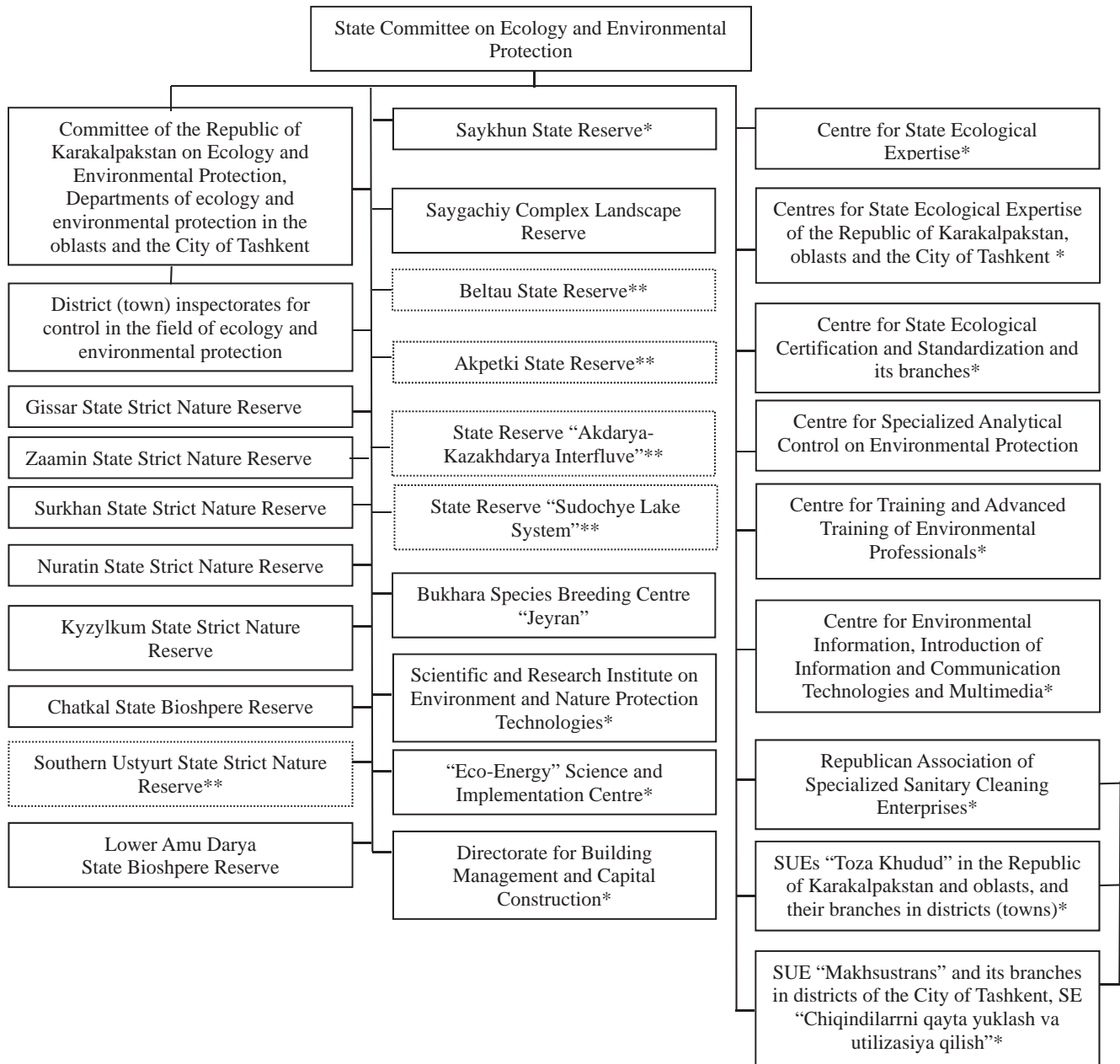
Figure 1.1 shows territorial bodies and subordinated organizations of SCEEP. In addition to organizations indicated on the figure, SCEEP has an advisory public council (chapter 5). The structure of the central apparatus (headquarters) of SCEEP is shown in figure 1.2.

#### Territorial bodies

There are two levels of territorial bodies:

- The Committee of the Republic of Karakalpakstan on Ecology and Environmental Protection and the departments of ecology and environmental protection of oblasts and the City of Tashkent;
- District (town) inspectorates for control in the field of ecology and environmental protection.

The territorial bodies implement measures and activities on environmental protection and improvement of the environmental situation in their territories. The Committee of the Republic of Karakalpakstan on Ecology and Environmental Protection and the departments of ecology and environmental protection of oblasts and the City of Tashkent issue some permits for the importation and export of ODSs, some logging permits and the conclusions of SEE for project documentation for category III and IV facilities. The district (town) inspectorates for control in the field of ecology and environmental protection do not issue any permits. Overall, compared with other countries, powers assigned to the territorial bodies at oblast and district (town) level are not significant.

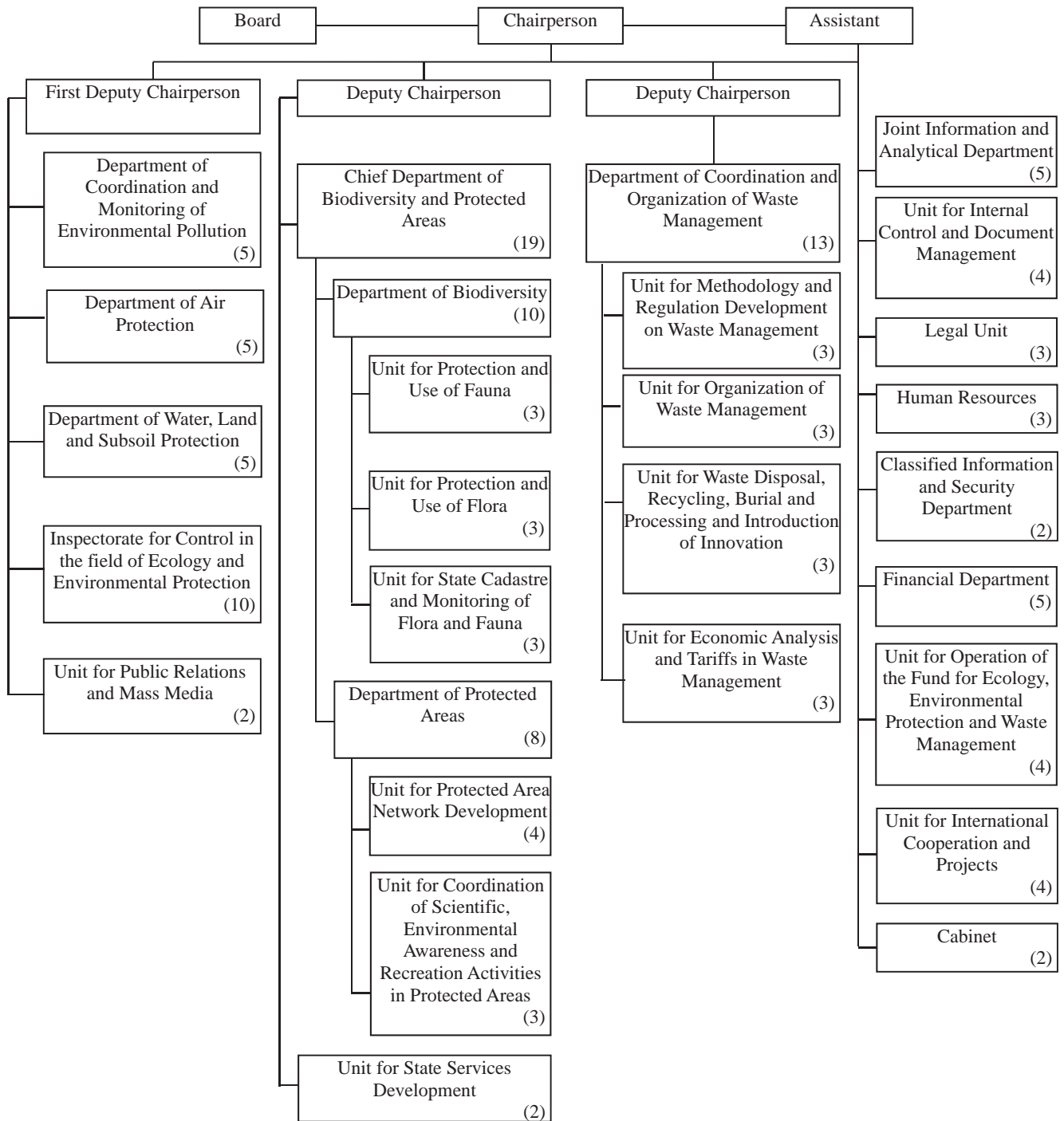
**Figure 1.1: Organizational structure of the State Committee on Ecology and Environmental Protection**

Source: 2019 Resolution of the President No. 4247.

Note: SE = state enterprise; SUE = state unitary enterprise.

\* Financed from non-budget funds and funds from economic activities.

\*\* Future PAs, not existent as at mid-2019.

**Figure 1.2: Central apparatus of the State Committee on Ecology and Environmental Protection**

Source: 2019 Resolution of the President No. 4247.

Note: Staff numbers are indicated in brackets.

**Photo 1: State Committee on Ecology and Environmental Protection**

Photo credit: Mr. Vadim Ni

#### Selected subordinated organizations

In April 2017, the Scientific and Research Institute on Ecology and Environmental Protection was created on the basis of Scientific State Enterprise “Ecology of Water Management”, Scientific, Research and Technological Institute “Atmosphere” and Tashkent Scientific and Research Institute “Vodgeo”. In late 2018, the Scientific and Research Institute on Ecology and Environmental Protection was transformed into the Scientific and Research Institute on Environment and Nature Protection Technologies. The reformed Institute is now tasked with facilitating the entire cycle of scientific innovation on environmental protection issues, from piloting scientific ideas to introducing scientific solutions into the production cycle.

The Centre for Specialized Analytical Control on Environmental Protection (CSAC) (until April 2017, the State Specialized Inspectorate of Analytical Control under the State Committee for Nature Protection) is responsible for analytical (laboratory) control and also for analysing the data and for methodological support to territorial bodies of SCEEP on monitoring of pollution sources and analytical control (chapter 4).

The Centre for State Ecological Expertise (until April 2017, the Main Administration for State Ecological Expertise) (<http://davekoeksptertiza.uz/>) is responsible for the organization of SEE. Its central office deals with the SEE for draft strategic documents, management plans for PAs, project documentation for categories I and II facilities and for several other categories of materials. Its territorial branches in the Republic of Karakalpakstan, oblasts and Tashkent City deal with project documentation for categories III and IV facilities.

The Centre for Training and Advanced Training of Environmental Professionals (<http://ecomarkaz.uz/>) was created in 2016 and started operation in April 2017. It offers training for environmental professionals and for drivers and other experts about the transportation of waste. In addition to lectures, training programmes include visits to laboratories of various enterprises (chapter 5).

In the period 2017–2019, a number of PAs were transferred under subordination of SCEEP.



### Staff

In 2018, SCEEP counted 114 staff in its central apparatus and 2,515 staff in its territorial bodies (table 1.1). A significant increase in staff numbers in 2017–2018 is largely due to the increase in responsibilities on waste management, together with the transfer of enterprises responsible for waste management under subordination of SCEEP.

### Sectoral ministries

In February 2018, the Ministry of Agriculture and Water Management was split into the Ministry of Agriculture and the Ministry of Water Management. The Ministry of Agriculture is responsible for implementation of state policy on agriculture and food security, including modernization of the agricultural sector and introduction of resource-efficient and water-saving technologies (2018 Resolution of the President No. 3671). All types of agriculture are under this Ministry, including cotton production.

The Ministry of Water Management (2018 Resolution of the President No. 3672) is responsible for organization of water management based on river basin principles, implementation of limit-based water use, management and modernization of irrigation and land reclamation systems and other hydrotechnical infrastructure, and development of water-saving irrigation technologies and other water-saving measures. Subordinated to the Ministry are 12 basin irrigation system administrations (BISAs) and the Ministry of Water Management of the Republic of Karakalpakstan, as well as many irrigation infrastructure management units. The Ministry coordinates the activities to support water user associations (WUAs) in developing intrafarm networks and hydrotechnical facilities. Responsibilities also include the development of cooperation with water management authorities of other countries, in particular in the Amu Darya and Syr Darya basins.

**Table 1.1: Staff of the State Committee on Ecology and Environmental Protection, 2015–2018, number**

	2015	2016	2017	2018
Central apparatus (headquarters)	35	35	82	114
Territorial bodies				
Republic of Karakalpakstan	127	127	182	212
Andijan	91	91	162	185
Bukhara	101	101	148	177
Jizzakh	80	80	133	172
Kashkadarya	115	115	167	200
Navoiy	83	83	123	154
Namangan	86	86	138	164
Samarkand	118	118	179	203
Surkhandarya	84	84	143	173
Syrdarya	72	72	115	142
Tashkent	158	158	204	247
Fergana	103	103	178	219
Khozrem	72	72	123	153
Tashkent City	54	54	58	114
Selected subordinated organizations				
Centre for Specialized Analytical Control on Environmental Protection	62	62	62	62
Centre for State Ecological Expertise	..	..	36	41
Centre for State Ecological Certification and Standardization	44	44	46	48
Scientific and Research Institute on Environment and Nature Protection Technologies	..	..	48	45
“Eco-Energy” Science and Implementation Centre	13	13	27	12
Centre for Training and Advanced Training of Environmental Professionals	..	..	19	19
Republican Association of Specialized Sanitary Cleaning Enterprises	..	..	34	34
SUEs “Toza Khudud” in the Republic of Karakalpakstan and oblasts, and their branches in districts (towns)	..	..	9 100	7 000
SUE “Makhsustrans” and its branches in rayons of the City of Tashkent and SE “Chiqindilarni qayta yuklash va utilizasiya qilish”	..	..	10 930	10 930

Source: State Committee on Ecology and Environmental Protection, 2019.

The Ministry of Emergencies is the public administration body in charge of prevention and response to natural emergencies and technological disasters, civil protection, hydrometeorology and operation of hydrotechnical infrastructure. In June 2017, the Centre of Hydrometeorological Service (Uzhydromet) and the State Inspectorate for Control and Supervision over the Technical State and Safety of Large and Particularly Important Water Management Infrastructure (Gosvodhoznadzor), both under the Cabinet of Ministers, were transferred under subordination of the Ministry of Emergencies (2017 Decree of the President No. 5066). In late 2018, Gosvodhoznadzor was transferred to the Ministry of Water Management. In April 2019, Uzhydromet was transferred to the Cabinet of Ministers. There are ideas about the need for establishment of an animal rescue service under the Ministry of Emergencies that could, for example, rescue a bear that got caught in a poaching loop or help a sick animal found in the natural environment.

The Ministry of Investments and External Trade was created in January 2019 by merging the former Ministry of External Trade and the State Committee on Investments (2019 Resolution of the President No. 4135). The new Ministry is responsible for implementation of state policy on state investments, coordination of efforts to attract foreign investments, external trade and international economic cooperation.

The Ministry of Energy is a new ministry created in February 2019 (2019 Decree of the President No. 5646). Three bodies previously under the Cabinet of Ministers were transferred to the new Ministry (Agency for Development of Nuclear Energy, Inspectorate for Control of the Use of Petroleum Products, and Inspectorate for Control in Power Production). Among others, the competences of the new Ministry are to promote the use of innovative technologies and increased energy efficiency in the oil and gas industry and power production and to promote the use of energy-efficient and energy-saving technologies in public administration and state budget-financed organizations. A JSC National Energy Saving Company, created in 2017 (2017 Resolution of the President No. 3238) to promote energy-efficiency measures among governmental bodies and organizations, was dismantled following the establishment of the Ministry of Energy. The Ministry of Energy is now the responsible authority in charge of implementation of policies to raise energy efficiency in all economic sectors and the social sector, introduce energy saving technologies and develop renewable energy (2019 Resolution of the President No. 4422).

The Ministry of Transport is a new ministry created in February 2019 on the basis of the Uzbek Agency of Road Transport (2019 Decree of the President No. 5647). Several governmental bodies (previously state committees and state inspectorates) became part of the new Ministry: the Committee on Roads, the Agency of Civil Aviation, the Inspectorate for Safety of Carriage by Rail and the Inspectorate for Control of Road Construction Works. Among other issues, the Ministry is in charge of developing the state transport policy, effective use of the country's transport potential, improvement of transport logistics and use of advanced information technologies in transport.

In early 2019, the Ministry of Economy was transformed into the Ministry of Economy and Industry in line with the 2019 Decree of the President No. 5621. The tasks of the Ministry include: analysis and forecasting of macroeconomic indicators; elaboration of strategies for development of industry; and active development of state policies on urbanization. The Agency on Urbanization under the Ministry of Economy and Industry was created (2019 Resolution of the President No. 4105). In October 2019, the Ministry of Economy and Industry was assigned the responsibilities to facilitate and implement green economy in the country (2019 Resolution of the President No. 4477).

A Ministry of Innovation Development was established in November 2017 (2017 Decree of the President No. 5264). Its relevant tasks include the promotion of innovation for state and public organizations and integration of scientific knowledge into education and industry. Introduction of green economy technologies is part of the Ministry's mandate. The Ministry promotes innovation in the health sector, economic and financial policies and tax policies. It also deals with promotion of new business models and disseminates scholarships in various fields (trade, sciences, industry and support to start-ups). There is a small unit on ecology and natural resources (two staff) in the Ministry.

The Ministry of Housing and Communal Utilities was formed in 2017 (2017 Decree of the President No. 5017) to ensure implementation of uniform state policy and intersectoral coordination in the housing and utilities sector. It deals with implementation of state programmes on multi-apartment housing, monitoring of the state of the multi-apartment housing fund, and development and organization of implementation of the programmes to build and modernize water supply, sanitation and heating infrastructure. Its responsibilities also include introduction of resource- and energy-saving technologies and equipment in the housing sector and

promotion of the use of modern local construction materials. The former agency Uzkommunkhizmat was transformed into the Agency Kommunkhizmat under the Ministry and is in charge of development and implementation of investment projects with foreign funding in the area of housing and utilities.

The relevant responsibilities of the Ministry of Employment and Labour Relations (reorganized in 2017 from the Ministry of Labour (2017 Decree of the President No. 5052)) include occupational safety. The State Labour Inspectorate is under this Ministry.

Under the Ministry of Finance, an Agency for Development of Public–Private Partnerships has recently been established (2018 Resolution of the President No. 3980).

#### *Other state committees and other actors*

The State Committee on Forestry was created in May 2017 on the basis of the Main Department of Forestry of the then Ministry of Agriculture and Water Management (2017 Decree of the President No. 5041). The State Committee deals with: development and implementation of the state policy on forestry; management of the state forest fund and some PAs; afforestation and reforestation; prevention of desertification; monitoring and research of the state forest fund and flora and fauna in the state forest fund; protection of forests from fire, diseases and illegal logging; and development of activities related to non-timber forest products. There are three national nature parks (Zaamin, Ugam-Chatkal and Zarafshan) under the State Committee. The State Committee has territorial bodies in the Republic of Karakalpakstan and nine oblasts, 66 state forestry grounds, 13 state forestry grounds for medicinal plant cultivation and five forestry and hunting grounds.

The State Committee on Geology and Mineral Resources is in charge of geological exploration, use and protection of subsoil resources, including mineral resources and groundwater. It issues the permits for water drilling and for special water use from groundwater resources. Kitab Geological State Strict Nature Reserve is under the State Committee.

The State Committee on Industrial Safety (Goskomprombez) was formed in 2018 on the basis of the former State Inspectorate for Surveillance on Geological Exploration of Subsoils, Safety in Industry, Mining and the Utilities Sector that was under the Cabinet of Ministers (2018 Decree of the President No. 5594). Goskomprombez is entrusted with state

policy and control over radiation and nuclear safety and industrial safety at hazardous industrial facilities.

The State Committee on Development of Tourism was established in 2016 on the basis of the National Company “Uzbektourism” (2016 Decree of the President No. 4861). The State Committee is tasked to develop various forms of tourism beyond the cultural tourism that is now well developed and to make tourism a strategic economic sector.

The main functions of Uzhydromet under the Cabinet of Ministers include: the development of a hydrometeorological observation system; providing government and citizens with information on actual and expected hydrometeorological conditions, on climate change, on the level of environmental pollution and emergency information on dangerous hydrometeorological phenomena; monitoring the state of crops and pasture vegetation; and air, soil and surface water monitoring.

The International Innovation Centre for the Aral Sea Region under the President (<https://iic-aralsea.org/>) was established in January 2019 upon the initiative of the Ministry of Innovation Development and the State Committee on Forestry (2018 Resolution of the President No. 3975). The Centre is tasked to work in cooperation with international organizations and donors to implement innovative solutions in salty lands of the Uzbek part of the Aral Sea region on afforestation, bioenergy, crop cultivation, livestock and pasture management, adaptation to climate change and other areas.

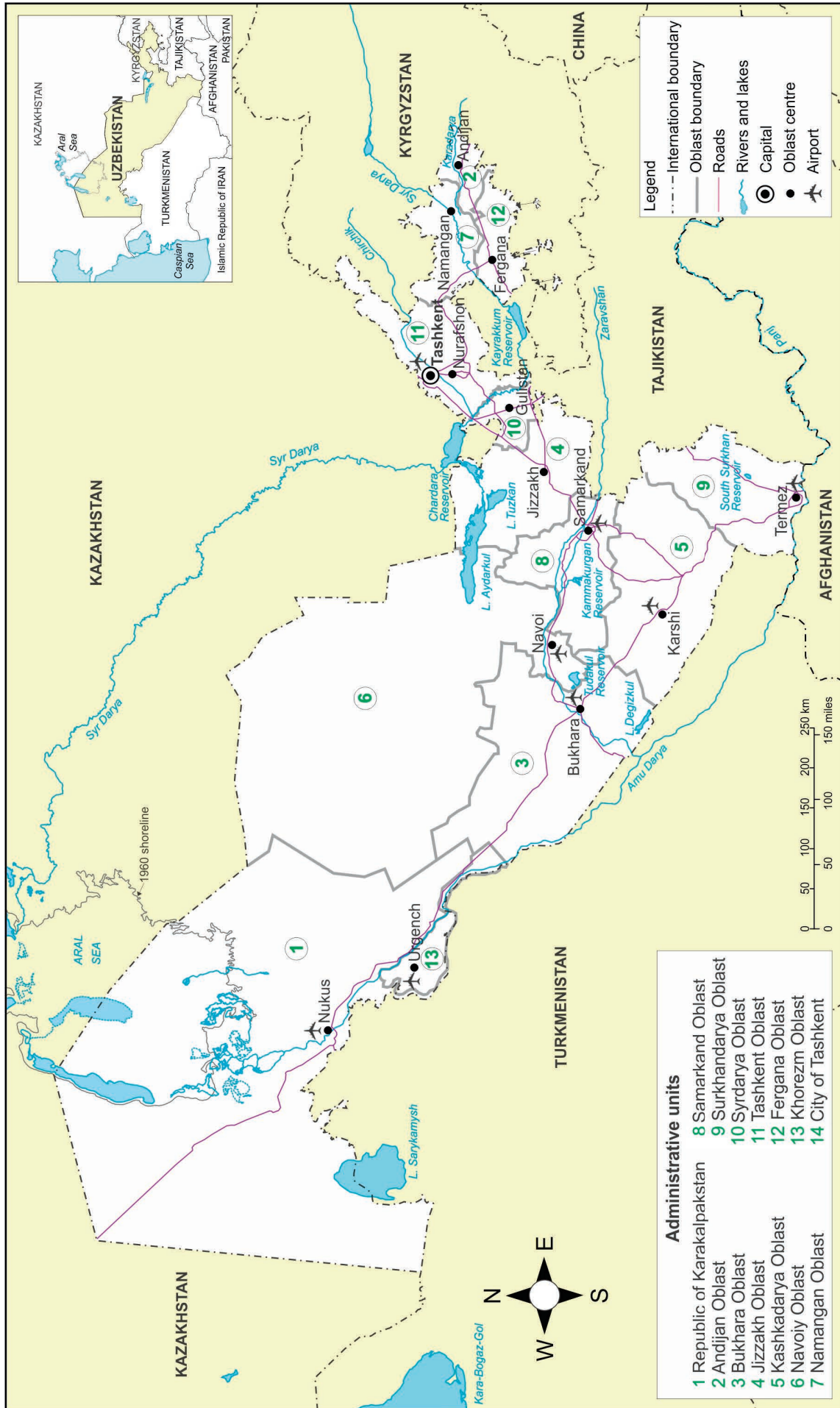
A Directorate for Aydar-Arnasay Lakes System was created under the State Tax Committee in 2017 (2017 Resolution of the Cabinet of Ministers No. 124) to develop commercial fishery as well as amateur fishing and tourism in the Aydar-Arnasay Lakes System.

#### *Local authorities*

From the administrative point of view, the territory of Uzbekistan includes the Republic of Karakalpakstan, 12 oblasts, 159 districts, 119 cities and towns, 11 districts within towns, 1,071 urban settlements and 267 villages (map 1.1).

Both representative (kengash) and executive (khokimiyat) authorities in a respective territory are headed by a khokim (chief executive official) of an oblast, district or town.

Map 1.1: Administrative map



Source: Prepared by ECE based on the map provided by the State Committee on Land Resources, Geodesy, Cartography and State Cadastre, 2019.

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



Environmental protection and management of local utilities are explicitly assigned to the competences of local authorities by the Constitution. Despite this, the organizational structure of khokimiyats at oblast, City of Tashkent, town and district levels does not include dedicated environmental protection units (2016 Resolution of the Cabinet of Ministers No. 123). Environmental issues in khokimiyats are therefore dealt with by the units responsible for agriculture, water management, construction, communications or utilities. Kengashes usually have permanent commissions that can be in charge of the environment in addition to several other issues (e.g. the Permanent Commission on Agriculture, Water Management and Environment in the Namangan Oblast Kengash).

### *Self-government*

Unlike in many other countries, self-government (also known as the Institute of Makhalla) is an important dimension of Uzbekistan's governance. Self-government bodies are citizens' meetings in qishloqs, auls (small villages) and urban makhallas; there are more than 10,000 across the country. They are not formally part of the public administration system but in fact are closely connected to it. There is a Republican Council for Coordination of Local Self-Government Bodies with its own territorial bodies, which is a governmental authority to coordinate and further develop the self-government system.

Self-government bodies play an important role in supporting vulnerable groups (e.g. in deciding on allocation of social benefits). In the environmental field, they are empowered to exercise public environmental control functions and can request and receive reports from enterprises and organizations on issues of environmental protection, sanitary conditions and landscaping. In recent years, they have been active in combating illegal tree felling and contested demolition of residential houses to free space for new construction.

### *Vertical coordination*

The current public administration system is highly centralized. In 2017, Uzbekistan started a large-scale administrative reform (Concept of Administrative Reform, 2017 Decree of the President No. 5185). The reform will address many dimensions of the public administration system. Among other things, it provides for step-by-step decentralization of public administration, increased financial opportunities and responsibilities of public administration bodies at the

local level, actual implementation of the separation of powers for public administration bodies at the local level, and a greater role for local self-government bodies.

As part of the reform, since August 2018, a special administration regime is being piloted in the City of Tashkent (2018 Decree of the President No. 5515). In particular, territorial bodies of several ministries in Tashkent and its districts were transferred under subordination of the khokims of the City of Tashkent and its districts and their heads are now appointed by the khokims upon consent of the respective minister. This should streamline activities at the local level and eliminate the need for coordination between territorial bodies of the ministries and khokimiyats. This pilot arrangement does not cover the territorial bodies of SCEEP.

In the environmental area, the opposite trend, i.e. that of centralization, can be observed with the creation, in 2017, of the SUEs "Toza Khudud" under the Committee of the Republic of Karakalpakstan and the departments of ecology and environmental protection of oblasts and the City of Tashkent with branches in towns and districts based on former municipal waste services departments under district khokimiyats.

### *Horizontal coordination*

In 2018, the number of interagency councils and commissions was drastically decreased (2018 Decree of the President No. 5527). Eighty-one bodies were dismantled, including the Interagency Council on the Kyoto Protocol Clean Development Mechanism (created in 2006), the Republican Commission on Implementation of Additional Measures to Economize on and Rationally Use Paper (created in 2010), the Interagency Council on Industrial Safety (created in 2011) and the Republican Commission on Energy Efficiency and Development of Renewable Energy Sources<sup>5</sup> (created in 2015). The same Decree introduced stricter rules for the establishment of new interagency bodies.

As at mid-2019, Uzbekistan had two major bodies for horizontal coordination on sustainable development that are instrumental for the country to achieve policy coherence for sustainable development in line with target 17.14 of the 2030 Agenda for Sustainable Development (box 1.1). Furthermore, a new body – the Intergovernmental Council to Promote and Implement Green Economy – was established in October 2019.

<sup>5</sup> This Republican Commission was reappointed in August 2019. The Ministry of Energy serves as its working body.



### Box 1.1: Target 17.14 of the 2030 Agenda for Sustainable Development

#### **Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development**

#### **Target 17.14: Enhance policy coherence for sustainable development**

Target 17.14 addresses how the country works across policy sectors and coordinates the sectors to achieve joint objectives of sustainable development. It also addresses the extent to which policies in various sectors are coherent and aligned with sustainable development. Uzbekistan's national target 17.14 largely resembles indicator 17.14.1 agreed at the global level and reads: Develop long-term mechanisms to integrate the principles of sustainable development into the decision-making process, and strategies' and programmes' implementation and development.

Uzbekistan has some institutional mechanisms for horizontal coordination on sustainable development issues at the national level, though there are not many interministerial councils created to address the issues of a cross-cutting and intersectoral nature. First, there is the National Commission on Implementation of the Action Strategy on Five Priority Directions for Development for the period 2017–2021, led by the President and consisting of top-level governmental officials and supported by five commissions also composed of high-level governmental officials (2017 Decree of the President No. 4947). Second, there is the recently established Coordination Council on Implementation of National Sustainable Development Goals, led by the Deputy Prime Minister and composed of ministers and vice-ministers (2018 Resolution of the Cabinet of Ministers No. 841). In addition, some horizontal coordination takes place as part of interministerial consultation processes when new legal documents are prepared. However, there is much room for improvement, to open up such bodies to allow effective inputs by other stakeholders along with governmental bodies and institutions. In addition, the scope of such bodies does not currently include all aspects of the 2030 Agenda for Sustainable Development.

There is a good degree of coherence among policy documents in Uzbekistan. Policy documents are largely consistent in terms of goals and objectives set and measures envisaged for their implementation. However, weak points of the planning system refer to reporting on implementation – in particular, the transparency of such reporting. The absence of SEA is a gap in ensuring the solid and coherent integration of environmental and green economy aspects into sectoral policies.

As at early 2019, there are not many interagency bodies relevant to environmental issues. Those that are relevant include the:

- Republican Commission for Coordination and Control of Implementation of the 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), led by the First Deputy Prime Minister and composed of high-level governmental representatives;
- Republican Commission for Coordination and Control of Implementation of the State Programme for Development of the Aral Sea Region (2017 Resolution of the President No. 2731), led by the Prime Minister and composed of ministers and high-level governmental representatives;
- National Committee on Large Dams (2011 Resolution of the Cabinet of Ministers No. 88) led by the Minister of Water Management and composed of mid-level governmental representatives and members of academia;
- Working Group for the National Action Plan on Implementation of International Commitments on Chemical, Biological, Radiation and Nuclear Safety for the period 2018–2021 (2018 Resolution of the Cabinet of Ministers No. 968), composed of mid-level governmental representatives and members of academia.

Horizontal coordination bodies including representatives of the public along with high-level governmental officials are practically non-existent. Rather, public councils (advisory bodies with participation of prominent citizens, business and NGO representatives, and representatives of the mass media) and self-government bodies (i.e. makhalla) are viewed as means of ensuring that public opinion is taken into account in decision-making processes. Little information about the activities of horizontal coordination bodies is channelled to the public through the media.

### **1.5 Assessment, conclusions and recommendations**

#### *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

### 2.1 Permitting and licensing

#### Permits

#### Air emissions, wastewater discharge, waste generation and disposal

The permission relating to pollutant emissions (air emissions, wastewater discharge, waste generation and disposal) from regulated activities is documented in Uzbekistan as a positive conclusion of the SEE on limit values for certain pollutants in air emissions or in wastewater discharge and for quantity of waste generation. It follows the EIA procedure, the outcomes of which are also being approved by positive conclusions of the SEE. The State Committee on Ecology and Environmental Protection (SCEEP) is the decision-making authority in both cases.

Both decision-making processes are based on the classification of covered facilities by four categories (category I – high risk, category II – medium risk, category III – low risk, category IV – local impact). As at March 2019, category I consisted of 37 types of high-risk facilities, category II of 32 types of medium-risk facilities, category III of 58 types of low-risk facilities, and category IV of 12 types of facilities with local impact. According to the State Committee on Statistics, the total number of facilities belonging to categories I–IV amounts to 46,000.

Certain facilities are assigned categories I, II and III

by using thresholds or other specified criteria (table 2.1), whereas other facilities are attributed to one category without specifying criteria. For instance, nuclear power stations and other nuclear reactors, waste incineration facilities, installations for the production of ferrous and non-ferrous metals, asbestos, cement clinker and explosive substances are determined as category I activities. The production of paper and board and glass fibre, and the rearing of poultry are determined as category II activities and the manufacture of bricks and tiles, markets, laundries and dry-cleaning are examples of category III activities. Activities with local impact (category IV) include such activities as car repair and car washing enterprises, construction of hotels, residential and administrative buildings, sites for collection of municipal solid waste (MSW) and greenhouses.

The current categorization of activities for environmental regulation and compliance assurance was introduced in November 2018. Previous categorization covered 172 types of regulated facilities; at the end of 2018, this number was reduced to 139. Some facilities are exempted from the requirements on EIA and the setting of emission, discharge, and waste generation and disposal limits. The new categorization lists 12 types of regulated facilities under category IV; there were 32 in the previous list. Also, the categorization of certain facilities has been reconsidered with their transfer to other categories.

**Table 2.1: Distribution of selected facilities between categories I, II and III**

Activity	Criterion	Category I	Category II	Category III
Thermal power stations	Heat input (MW)	≤ 300	100–299	< 100
Landfills for municipal solid waste	Population equivalent	> 200 000	100 000–200 000	
Processing of waste	Hazardous class of waste	I and II	III	IV and V
Wastewater treatment facilities	Capacity (m <sup>3</sup> per day)	> 280 000	50 000–280 000	< 50 000
Roads	Status	International, national	Regional	Local
Electrical power lines	Status	National	Regional	
Oil and gas processing and transportation	Status of pipelines	National + refineries		Rural settlement
Groundwater abstraction	Status		Inter-oblast	Oblast

Source: 2018 Resolution of the Cabinet of Ministers No. 949.

SCEEP authorizes emission, discharge, and waste generation and disposal limits for many more sources of air emissions and waste than for sources of wastewater discharge. The numbers of authorized limits for wastewater discharges issued by this authority in the period 2014–2018 amounted to approximately one tenth of the numbers of authorized limits for air emissions and generation of waste (table 2.2). This is because operators of municipal wastewater facilities are entitled to approve wastewater discharge limits for their clients directly.

### Water abstraction

The abstraction of water from rivers, lakes, water reservoirs, ponds and canals, as well as from groundwater, requires a permit for special water use and water consumption. Three governmental bodies share the competence on the issuance of such permits.

SCEEP issues permits for the water abstraction from lakes, rivers, streams and other natural sources of surface water, e.g. glaciers, groundwater from aquifers and mines. According to the Open Data Portal (<https://data.gov.uz>), in 2017, 573 such permits were issued by SCEEP.

The Ministry of Water Management issues permits for special water use and water consumption from water reservoirs, ponds and irrigation canals, as well as from drainage systems. In both cases, the issuance of permits for special water use or water consumption is subject to annual limits set by the issuing authority. In the period 2014–2016, the Ministry of Water Management issued eight such permits at the national level (3 in 2014, 1 in 2015 and 4 in 2016). No permits for special water use were issued by this authority in 2017–2018.

As of 1 April 2018, the State Committee on Geology and Mineral Resources issues permits for special water use from groundwater. Before 1 April 2018, SCEEP was responsible for the issuance of permits for special water use from groundwater. In 2018, the State Committee on Geology and Mineral Resources issued 388 such permits and SCEEP issued 598. The number

of issued permits was 557 in 2017, 557 in 2016, 737 in 2015 and 832 in 2014.

Permits for special water use are usually valid for five years.

The procedure for issuance of permits for water abstraction differentiates such water users as operators of water reservoirs, pumping stations, irrigation networks (basin, regional and district), energy installations, amelioration expeditions and water user associations (WUAs). Persons who abstract less than 5 m<sup>3</sup> per day or consume water from municipal networks of drinking water supply are exempted from obtaining this permission. In the case of agricultural WUAs, their individual members use water for irrigation on the basis of a permit issued to the relevant WUA that provides them with water supply services. Members of WUAs use water on the basis of contracts with their associations.

### Use of natural resources

SCEEP is the competent authority for the issuance of all permits for the use of wild fauna, including their specimens and derivatives. It issues permits for the following uses of wild fauna:

- Catching (hunting) species that are not listed in the Red Book of Uzbekistan;
- Catching species that are listed in the Red Book of Uzbekistan;
- Catching species for captive breeding;
- Exporting/importing CITES species, specimens and derivatives, including for zoos;
- Exporting/importing species, specimens and derivatives which are not on the CITES lists.

SCEEP shares the competence on the issuance of permits for the use of wild flora with the State Committee on Forestry. The latter is responsible for the issuance of permits on the use of wild flora on lands designated to the category of the state forest fund, whereas the former issues such permits on all other lands of Uzbekistan.

**Table 2.2: Emission, discharge and waste generation and disposal limits issued by the State Committee on Ecology and Environmental Protection, 2014–2018, number**

	2014	2015	2016	2017	2018
Air pollution	128	164	251	304	276
Wastewater discharge	27	19	43	32	21
Generation of waste	134	149	225	289	283
<b>Total</b>	<b>289</b>	<b>332</b>	<b>519</b>	<b>625</b>	<b>580</b>

Source: State Committee on Ecology and Environmental Protection, 2019.



SCEEP issues permits for the following types of use of wild flora:

- Special use of plants;
- Harvesting species that are listed in the Red Book of Uzbekistan;
- Cutting trees and shrubs that are not part of the forest fund;
- Exports/imports of CITES species, specimens and derivatives, including for botanical gardens;
- Exports/imports of species, specimens and derivatives which are not on the CITES lists.

Since October 2014, SCEEP has been the competent authority to issue permits on species listed in the Red Book of Uzbekistan; before that date, the Cabinet of Ministers had the sole competence. After the change of this competence (2014 Resolution of the Cabinet of Ministers No. 290), the Cabinet of Ministers should agree on the permits issued by SCEEP on the use of species listed in the Red Book of Uzbekistan. The transfer of the power from the Cabinet of Ministers to the Committee weakens the regime of protection of

rare and endangered species as it made it easier to obtain such permits.

#### Ozone-depleting substances

Imports to and exports from Uzbekistan of certain ODSs listed in annexes of the 2019 Resolution of the Cabinet of Ministers No. 17 require a permit issued by SCEEP. As at March 2019, the annexes mention 96 ODSs. The issuance of permits for imports of the listed ODSs to Uzbekistan is also subject to national quotas set for the period 2018–2030. The importation and export of certain equipment containing the regulated ODSs also require a permit from SCEEP.

#### *Integrated permitting*

Uzbekistan does not apply either integrated permitting for prevention and control of pollutants or best available techniques (BAT). Maximum allowable concentrations (MACs) are the basis for authorizing air emissions, wastewater discharge and waste disposal limits in Uzbekistan.

**Photo 2: Muskrat (*Ondatra zibethicus*) on the outskirts of Samarkand City**



*Photo credit: Ms. Mariya Gritsina*

### *Public participation in permitting*

The permitting process does not provide for public participation in the relevant decision-making processes. The time frames for the authorization of emissions, discharge and waste generation and disposal limits for regulated facilities (category I – 20 calendar days, category II – 15 calendar days, category III – 10 calendar days, category IV – 5 days) are too short to enable any public participation.

### *Licensing*

Environment-related licensing covers:

- Use of underground resources (mining of oil and gas, precious and rare metals, gemstones, uranium, non-metallic mineral resources);
- Use of ionizing radiation sources (16 licences issued in 2017, 18 licences issued in 2018);
- Design, construction and exploitation of high-risk and potentially dangerous facilities (362 licences issued in the period 2009–2015).

#### Use of underground resources, including mineral resources

The use of underground resources requires licences for mining mineral resources, including separate licences for mining oil and gas, precious and rare metals, gemstones and uranium, and obtaining permits for drilling wells for use of groundwater. In 2018, 202 permits were issued for drilling wells to use groundwater for different needs, including for drinking, irrigation and drainage. As at March 2019, data on issued mining licences for the use of other underground resources were not accessible for the public on the websites of the respective licensing authorities and the Open Data Portal.

#### Radioactive sources

The production, use, storage, maintenance, transportation, processing and disposal of radioactive materials require a licence from the State Committee on Industrial Safety. The licensing authority involves representatives of SCEEP, the Ministry of Internal Affairs, Ministry of Health and Ministry of Emergencies in this decision-making process by the establishment of an intersectoral commission.

## **2.2 Environmental impact assessment and state ecological expertise**

### *National context*

Having its roots in the Soviet approaches to environmental approvals of planned economic and other activities, the existing system of project-level environmental assessment comprises two distinct but interlinked elements: EIA<sup>6</sup> and SEE.

The concept of EIA in Uzbekistan has not changed since 2010. EIA is required for the activities listed as categories I, II, III and IV for the purposes of environmental regulation as well as for periodical updating (every three years) of the operating conditions for relevant existing facilities. EIA should also be conducted for such facilities in the event of their extension, reconstruction, technical modernization, or changing technological processes that may have an impact on the environment and human health. The State assigns the responsibility for carrying out an EIA study and for the preparation of EIA documentation to the project developer, who usually hires EIA experts to perform the task. No qualification requirements, such as licensing or certificates, are set in Uzbekistan in relation to EIA experts.

The scoping as part of the EIA procedure is not provided by the national legislation. Uzbekistan defines requirements for the content of the EIA documentation that are not fully consistent with Appendix II of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention); though the country is not a party to, and so not bound by, the provisions of this Convention.<sup>7</sup> For instance, the country's requirements do not include the Convention's requirements on no-action alternative, non-technical summary, identification of gaps in knowledge and uncertainties encountered in compiling the required information.

EIA is a part of the environmental decision-making process on planned activities that is followed by SEE. The EIA documentation is subject to review by SCEEP's Centre for State Ecological Expertise (categories I and II activities) and relevant centres of the Republic of Karakalpakstan, oblasts and the City of Tashkent (categories III and IV). Together, these centres reviewed EIA documentation at the national

<sup>6</sup> The term EIA in Uzbekistan, despite its name, should be distinguished from what is generally understood as EIA procedure under the Espoo Convention or EU EIA Directive. While the same term is used, it reflects slightly different practices.

<sup>7</sup> In 2018–2019, Uzbekistan intensified its cooperation with the Espoo Convention. In particular, two reviews of the legal and institutional frameworks of Uzbekistan vis-à-vis the provisions of the Espoo Convention and its Protocol on SEA were prepared (chapter 6).

and local levels for 27,500 projects in 2016, 32,510 projects in 2017 and 33,752 projects in 2018.

The activities for which EIA is required are determined on the basis of the lists of four categories of activities included in the Regulation on State Ecological Expertise, which was updated in 2018 (2018 Resolution of the Cabinet of Ministers No. 949). Their scope is very broad in comparison with Annex I of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention), Appendix I of the Espoo Convention or Annex II of the EU EIA Directive (Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment). For instance, the list of activities that are subject to EIA in Uzbekistan includes markets, laundries and dry-cleaning enterprises, vehicle repair services, furniture manufacturing and repair, sites for storage of MSW, greenhouses and printing houses. In the absence of a screening procedure in Uzbekistan, all such activities are subject to the EIA and SEE requirements.

As a rule, the EIA procedure can be conducted in either one or two stages. The one-stage EIA procedure is applicable to category IV activities and requires developers to submit draft declarations on environmental impact. In the two-stage EIA procedure, developers submit draft declarations on environmental impact (the first stage) and thereafter declarations on environmental consequences (the second stage). The two-stage EIA is required for categories I, II and III activities. The stage of draft declarations on environmental impact should be at an early stage of the decision-making process and before financing of relevant projects. The stage of declarations on environmental consequences takes place after construction and before commissioning. The 2018 Regulation on State Ecological Expertise also entrusts the SEE authorities to determine, for certain reviewed activities, the three-stage EIA procedure, by requesting a developer to conduct an additional EIA study after the review of a draft declaration on environmental impact. However, the statistical data for the period 2014–2018 do not provide evidence of its practical application, even by

SCEEP's Centre for State Ecological Expertise (table 2.3).

The development of certain plans, programmes and policies is subject to SEE (chapter 1). As at March 2019, the requirement for SEE was applied only in relation to draft urban master plans. No examples of its actual application to other strategic documents were provided by SCEEP. No statistical data are available on the SEE of draft master plans.

#### Time limits

The time limits for the SEE of the submitted EIA documentation, as approved by the 2018 Resolution of the Cabinet of Ministers No. 949, are very tight if a thorough review of the proposed activities on the basis of the submitted EIA documentation is expected. In some cases, the SCEEP Chairperson may extend the time limit for the review of category I activities for up to 20 calendar days, but such an exemption is not applicable for the other three categories (table 2.4). Thus, these time constraints are particularly relevant when proposed activities with likely significant environmental impact are determined as categories II, III or IV activities that often require the thorough expert review of voluminous EIA reports.

#### Public participation

Public participation is explicitly required at two stages of EIA – the submission of declarations of environmental impact and the submission of declarations of environmental consequences. In both cases, this refers to public hearings as the only form of public participation, but there are no detailed procedures of public participation in EIA in Uzbekistan. The presented examples of conclusions of SEE show that, in some cases, public authorities do consider compliance by project developers with the requirement for public hearings. However, in most observed cases in Tashkent City during the EPR expert mission, representatives of the public obtained access to information and public participation opportunities after the beginning of construction rather than at the EIA stage.

**Table 2.3: Review of EIA documentation by the Centre for State Ecological Expertise under the State Committee on Ecology and Environmental Protection, 2014–2018, number**

Type of reviewed EIA documentation	2014	2015	2016	2017	2018
Declaration on environmental impact	875	891	1 130	1 213	1 619
Declaration on environmental consequences	286	316	492	468	491
<b>Total</b>	<b>1 161</b>	<b>1 207</b>	<b>1 622</b>	<b>1 681</b>	<b>2 110</b>

Source: State Committee on Ecology and Environmental Protection, Centre for State Ecological Expertise, 2019.

**Table 2.4: Time limits for decision-making under the 2001 and 2018 Regulations on State Ecological Expertise**

Decision-making process	Time limit	
	2001 Regulation	2018 Regulation
Category I activity	30 calendar days	20 calendar days
Category I activity (possible extension of consideration)	2 months	20 calendar days
Category II activity	30 calendar days	15 calendar days
Category II activity (possible extension of consideration)	2 months	not applicable
Category III activity	20 calendar days	10 calendar days
Category III activity (possible extension of consideration)	1 month	not applicable
Category IV activity	10 calendar days	5 calendar days
Category IV activity (possible extension of consideration)	1 month	not applicable

Source: 2018 Resolution of the Cabinet of Ministers No. 949; 2001 Resolution of the Cabinet of Ministers No. 491.

There is no regular review by the SEE authorities of compliance by developers with the public participation requirements prescribed by the legislation. There are cases when developers provided false information during the conduct of public hearings. Also, in some cases, developers can construct a facility for an activity which is not subject to EIA and then switch it to an activity which is subject to EIA, e.g. dry-cleaning and laundries, thereby bypassing the public participation requirements.

#### Public ecological expertise

The 2000 Law on Ecological Expertise allows NGOs and citizens to conduct public ecological expertise on a broad scope of proposed and ongoing activities. Conclusions of this type of ecological expertise are advisory and, according to interviewed representatives of civil society and NGOs, this instrument of engagement of the public in environmental decision-making was not used in the period 2010–2018. The reasons are that conducting public ecological expertise requires human and financial resources from the NGOs or citizens who organize it, but the outcomes are merely advisory for decision-makers.

#### *Transboundary context*

There are no provisions on the procedure of transboundary EIA in the national legislation. No cases of practical application of transboundary EIA were identified in Uzbekistan as at March 2019.

## 2.3 Environmental standards

### *Emission standards*

The emission standards are maximum permissible quantities of pollutants in air and wastewater discharges, quantities of generated waste and limits for waste disposal. The requirement on their setting applies to the categories I–IV activities classified as for EIA. The process of setting environmental standards for regulated facilities consists of two stages. The first stage is the identification of the sources of air emissions, wastewater discharges, generation and disposal of waste. The identified sources of pollution should be documented as inventories of sources of pollution and submitted for approval by SCEEP's relevant territorial department. At the second stage, calculated limits of air emissions, wastewater discharges, generation and disposal of waste are submitted for approval to SCEEP for category I activities or to its territorial departments for categories II–IV facilities. The pollutant permits are not issued as such but are documented as conclusions of SEE on submitted emission limits.

### Air

The setting of limits for air emissions is based on their MACs. Air emissions limits differ for oblasts and some cities of Uzbekistan and depending on classes of hazard (1–4) of pollutants by the application of different factors (shares of MACs) (table 2.5).

**Table 2.5: Air emission limits per oblast and selected cities by class of hazard of pollutants**

Oblast or city	Class of hazard of pollutants			
	1	2	3	4
Tashkent, Fergana, Andijan and Namangan Oblasts, cities of Tashkent, Navoiy, Bukhara and Samarkand	0.17	0.20	0.25	0.33
Bukhara, Jizzakh, Kashkadarya, Navoiy, Samarkand, Surkhandarya and Syrdarya Oblasts	0.20	0.25	0.33	0.50
Republic of Karakalpakstan and Khorezm Oblast	0.25	0.33	0.50	1.00

Source: 2014 Resolution of the Cabinet of Ministers No. 14.



### Wastewater

The setting of limits of wastewater discharges is also based on their MACs. Operators of facilities discharging wastewater directly into water bodies or onto terrain should have discharge limits approved by conclusion of the SEE. Operators of municipal wastewater facilities are entitled to approve wastewater discharge limits for their clients (municipal environmental standards). Also, according to the 2010 Resolution of the Cabinet of Ministers No. 11, the municipal environmental standards should be agreed by SCEEP or its territorial departments. However, the municipal environmental standards are not included in the exhaustive List of Permission Documents for Business Activities (2013 Resolution of the Cabinet of Ministers No. 225). Thus, there is no state regulation of a considerable proportion of wastewater discharges and no information in the public domain on compliance of facilities with their municipal environmental standards (box 9.3).

### Noise

The maximum permissible level of noise at workplaces is 80 dB with application of differentiation depending on types of work. The maximum permissible level of noise in buildings and adjacent territories varies for different functional types of buildings and the noise frequency. There is no set permissible level of noise from transport, with the exception of aircraft.

### *Ambient quality standards*

The system of ambient quality standards has not changed since 2010. It is based on the application of MACs of certain pollutants in ambient air, water and soil as defined by decisions of the Chief State Sanitary Doctor. The 2011 Sanitary Rules and Norms (SanPiN) No. 0293-11 contains a list of MACs of 485 pollutants for air in settlements.

MACs for surface water cover 61 pollutants and parameters. MACs are set separately for: (i) water for drinking, cooking, washing, laundering and household needs (cultural functions and households needs); and (ii) water bodies used for fishery.

MACs for soil are defined for 35 substances considered as typical for anthropogenic impacts, and for 109 pesticides.

### *Product standards*

Sanitary rules and norms and hygienic standards are the main regulatory instrument for setting product standards in Uzbekistan. The main focus of the sanitary product standards is on food, food components and additives, and toys.

### Food

The 2010 SanPiN No. 0283-10 sets maximum amounts for certain food additives and maximum residue limits for pesticides in food. For instance, the regulated food additives include antibiotics, grisin, bacitracin, chloramphenicol in meat, meat products and poultry, penicillin, streptomycin, chloramphenicol and tetracycline antibiotics in milk and dairy products, streptomycin, chloramphenicol and tetracycline antibiotics in eggs and egg products, polychlorinated biphenyls (PCBs) in fish and fish products, and benzopyrene in smoked meat and fish. The 2001 SanPiN No. 0109-01 sets hygiene standards (maximum residue limits) for pesticides on vegetables, fruit and certain food products. Food containing GMOs requires quantitative testing prior to decision-making by the Ministry of Health on its admission to the market.

### Construction materials

Regulatory acts related to the use of construction materials set requirements on asbestos-containing materials and polymer materials. The 2004 SanPiN No. 0168-04 lists permitted asbestos-containing materials and the use of other such materials requires sanitary epidemiological conclusions (i.e. approval) by the Ministry of Health. The use of polymer construction materials is allowed on the basis of conducting a hygiene assessment and obtaining a hygiene certificate issued by an accredited testing laboratory.

### Toys

The 2018 SanPiN No. 0354-18 set safety standards and requirements on toys. It lists limits for certain toxic substances contained in materials used by toy manufacturers, including different types of plastic, rubber, wax, paper, cardboard, wood, ceramics, glass, fur, textile and painting materials. The list of regulated chemical substances and products used in toys includes lead, mercury, chrome, cadmium, arsenic, zinc, tin, aluminium, barium, formaldehyde, styrene and dibutyl phthalate and the document sets limits for those chemicals.

## 2.4 Compliance assurance mechanisms

### *Self-monitoring and reporting by regulated entities*

In Uzbekistan it is mandatory for regulated entities of categories I–IV to conduct environmental self-monitoring. However, there is no requirement for them to put reports of self-monitoring in the public domain. Reports should be disclosed upon request by environmental enforcement authorities and at the time an inspection is taking place. Such reports are not available to the public. Operators are obliged to notify SCEEP or its territorial departments in cases of exceeding the set emission limits.

### *Citizen involvement in compliance monitoring (public environmental control)*

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 efficient complaint-based monitoring procedures for effective citizen involvement in environmental enforcement. Public awareness of environmental aspects of industrial activities is at a low level. There are very limited opportunities for members of the public to obtain such information at the EIA stage of an industrial development. Companies do not disclose environmental information related to their ongoing activities, whether through voluntary reports or publicly accessible databases or inventories of chemicals or pollutants released to air, water and soil. Also, there is a lack of NGOs specializing in environmental enforcement and practising environmental litigation.

Citizens' environmental concerns focus on smaller projects in the close vicinity of their homes, e.g. construction of cafes, shops and community service centres, tree felling and waste issues. Thus, there is an obvious lack of citizen engagement in monitoring of environmental compliance of projects and operating facilities and installations with significant environmental effects.

### Public inspectors

The 2015 Model Provisions on Public Inspectors entitle any citizen to apply for the status of a public environmental inspector. From 2017, thousands of citizens received SCEEP-led training and obtained identity cards as public environmental inspectors (table 5.1). However, there are no official statistics on

inspection and enforcement activities by these public environmental inspectors.

### *Environmental audit*

Environmental audit remains a rarely used tool of self-monitoring of environmental compliance, despite the regulation on environmental audit approved by the 2015 Resolution of the Cabinet of Ministers No. 286. No concrete examples of environmental audits in Uzbekistan were provided as at March 2019. SCEEP developed a draft law on environmental audit but the draft has not yet been adopted.

SCEEP's Centre for State Ecological Certification and Standardization and some private companies conduct audits on environmental management systems (EMS).

### *Inspections*

The previous inspection procedures have been changed in Uzbekistan. As of 1 January 2017, non-scheduled inspections were cancelled. The only exemption was provided at that time for short-term non-scheduled inspections to check alleged non-compliance with the legislation on the basis of complaints by citizens and legal entities and, with their approval, by the authorized body on coordination of inspections and enforcement. Further, scheduled inspections and inspections to check the execution of previous orders regarding an administrative offence were cancelled and the new inspection procedures were introduced on 1 September 2018 (2018 Decree of the President No. 5490). The major novelty was introduction of risk analysis to inspection planning.

As of 1 April 2019, inspections based on complaints by citizens and legal entities or initiated by inspectorates on the basis of risk analysis of business activity shall be approved by the Authorized Official under the President on Protection of Rights and Lawful Interests of Business Entities (Business Ombudsperson) and they should be conducted within 1–10 days (2019 Decree of the President No. 5690). Furthermore, 29 specific types of inspection can be conducted after prior notification of the Business Ombudsperson and data are registered in the united registry of inspections. Two of the 29 types of inspection are directly relevant to environmental compliance and enforcement, namely, monitoring of large sources of pollution at facilities agreed by the Business Ombudsperson and monitoring of relevant sites by SCEEP to prevent the burning of waste, fallen leaves and grass, and tree felling.



### Environmental inspections

SCEEP regularly conducts the monitoring of sources of air and water pollution for compliance with emission and wastewater discharge limits, as well as the monitoring of sources of soil pollution for compliance with MACs. The Centre for Specialized Analytical Control on Environmental Protection (CSAC) and relevant units of SCEEP's territorial departments perform this monitoring; they should monitor sources of air pollution monthly, sources of water pollution quarterly and sources of soil pollution twice a year (chapter 4). Although these activities are formally called "monitoring", they are subject to the regulation of inspections by the Business Ombudsperson and, in essence, they are part of periodical environmental inspections of the listed facilities agreed by the Business Ombudsperson.

Although the staff of CSAC and relevant units of territorial departments are not entitled to apply sanctions for non-compliance, they report such cases to SCEEP's Inspectorate for Control in the field of Ecology and Environmental Protection. The monitoring by CSAC is subject to possible follow-up enforcement activities by the inspectors.

In 2018, the number of monitored facilities dropped from the average 390 per annum in the period 2013–2017 to 342. However, in 2019, CSAC is going to increase its monitoring coverage to 558 facilities (table 2.6).

CSAC's regular monitoring of sources of pollution covers a small proportion of them, mostly facilities of categories I and II. Monitoring of environmental compliance by other regulated facilities, of categories I–IV, is the subject of inspections by SCEEP's

Inspectorate for Control in the field of Ecology and Environmental Protection.

The application of scheduled environmental inspections of facilities continued to decrease during the reviewed period (from 1,867 planned inspections in 2008 to 780 in 2017). The scheduled environmental inspections were cancelled from 1 September 2018 and replaced by inspections on the basis of risk analysis of business activity, including outcomes of the monitoring of sources of pollution at facility level. Meanwhile, the application of non-scheduled inspections, including those triggered by citizen complaints, was very rare; e.g. there were only 13 in 2017. As at March 2019, no statistical data were available to assess the efficiency of environmental compliance assurance on the basis of risk analysis of the activities of facilities, as introduced from 1 September 2018.

The introduction of the new inspection procedures in 2017–2018 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. The total number of conducted environmental inspections was even higher in 2018 (18,309) than in 2016 (16,511); however, in 2018, more than a half of them (8,576) were conducted on MSW, compared with only 1,113 such inspections in 2016, i.e. the number of inspections related to MSW increased by 7.7 times over that period (table 2.7). Meanwhile, the number of inspections on air pollution in 2018, compared with 2016, dropped by 1.57 times, on water by 1.45 times, on land by 1.88 times and on industrial waste by 1.43 times. Planning inspections of the basis of risk analysis represents difficulties for enforcement authorities, especially when it comes to environmental inspections of industrial and mining facilities.

**Table 2.6: Monitoring of sources of pollution at facility level by the Centre for Specialized Analytical Control, 2013–2019, number**

	2013–2017 (average)	2018	2019 (plan)
Air	167	157	264
Water	119	110	171
Soil	104	75	123
<b>Total</b>	<b>390</b>	<b>342</b>	<b>558</b>

Source: State Committee on Ecology and Environmental Protection, Centre for Specialized Analytical Control, 2019.

**Table 2.7: Environmental inspections and cases of non-compliance detected by the State Committee on Ecology and Environmental Protection, 2016–2018, number**

	2016		2017		2018	
	Inspections	Non-compliance	Inspections	Non-compliance	Inspections	Non-compliance
Air	3 119	3 645	2 447	2 699	1 989	3 294
Water	2 364	3 375	1 568	2 214	1 629	2 339
Industrial waste	653	4 498	606	3 522	456	5 637
Municipal solid waste	1 113	719	3 454	375	8 576	198
Land	1 377	2 186	1 154	2 058	732	1 515
Fauna	526	311	2 483	384	345	342
Flora	1 258	1 114	390	911	942	785
Fishery	6 101	3 528	6 464	3 350	3 640	3 180
<b>Total</b>	<b>16 511</b>	<b>19 376</b>	<b>18 566</b>	<b>15 513</b>	<b>18 309</b>	<b>17 290</b>

Source: State Committee on Ecology and Environmental Protection, 2019.

### Forests

Inspections by the State Committee on Forestry aimed at enforcement of the requirements on forest protection and prevention of forest fires require neither the consent nor notification of the Business Ombudsperson as they are based on guarding and patrolling sites. Before the establishment in 2017 of the State Committee on Forestry, the compliance monitoring on forests was conducted by the Main Department of the Ministry of Agriculture and Water Management and SCEEP. As at March 2019, the competence of SCEEP is limited to inspections on protection of fauna and flora outside the state forest fund.

### Fish resources

SCEEP's inspectors conduct the compliance monitoring and enforcement of requirements on fish resources protection. They do it on the basis of patrolling designated fishing grounds and other potential places for poaching. There were 785 detected cases of non-compliance with the fish protection requirements in 2018, 911 in 2017 and 114 in 2016.

### Industrial safety

Two types of inspection on industrial safety at facilities can be conducted on notification of the Business Ombudsperson. One is the inspection by the State Committee on Industrial Safety of compliance with industrial, radiation and nuclear safety at the facilities agreed to by the Business Ombudsperson. In 2017, 3,227 such compliance checks were conducted and 4,001 were conducted in 2018. The second type of inspection allowed on notification of the Business Ombudsperson is the safety check of 273 dams and other hydrotechnical installations. It is the competence of the State Inspectorate for Control and Supervision over the Technical Status and Safety of Large and

Particularly Important Water Management Infrastructure (Gosvodhoznadzor) of the Ministry of Water Management. Gosvodhoznadzor conducts visual surveillance of all regulated facilities annually and instrumental inspection of each regulated facility once every 3–5 years.

### Joint inspections

The practice of joint inspections is widespread in Uzbekistan, e.g. joint visits by representatives of various inspectorates to illegally constructed sites. There is also an established practice of joint monitoring of compliance with emission standards on vehicles by inspectors of SCEEP, the road safety police of the Ministry of Internal Affairs and the State Sanitary and Epidemiological Surveillance Service (SSESS) of the Ministry of Health. It takes place regularly, namely, twice a year, from 10 April until 10 May and from 10 August until 10 September.

## **2.5 Non-compliance response**

### *Administrative measures*

Administrative measures for environmental non-compliance, in most cases, are limited to the application of monetary measures, namely, administrative fines. For certain types of offences on fauna, namely, poaching and illegal trade, the application of a fine is supplemented by the confiscation of illegally possessed species (specimens) and equipment and vehicles involved in the offence. Non-monetary measures are actively used in a few areas of the environmental regulation and compliance assurance. For example, in the area of industrial safety, in 2018, inspectors imposed fines in only 79 of 14,494 detected cases of non-compliance; the most commonly applied measure was the issuance of a prescription for corrective action. A similar approach is applied in the area of monitoring of

compliance with dam safety requirements.

As at March 2019, fines for environmental administrative offences were in the range of 0.1–150 minimum salaries. The sizes of administrative fines that can be applied for certain types of environmental non-compliance are clearly disproportionate to the nature of the offence and harm that can be caused. For instance, conducting activities without a positive conclusion of the SEE can entail a fine of 1–3 minimum salaries even if it concerns construction of a large industrial facility with significant environmental effects. Another example is illegal trade in CITES species, 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. Furthermore, no criminal sanction can be imposed for illegal trade in CITES species that are not listed in the Red Book of Uzbekistan. In such cases, the amounts of administrative fines do not constitute a deterrent. The economic benefits that can be gained from the illegal activity clearly outweigh the size of fines imposed. For comparison, a fine for dumping garbage, a routine and widespread offence in Uzbekistan, varies in the range of 0.5–3 minimum salaries for a citizen and 5–10 minimum salaries for an official. One of the reasons for this disproportionality is that administrative sanctions cannot be imposed directly on legal entities.

#### *Criminal measures*

Uzbekistan applies criminal sanctions in response to environmental non-compliance as a last resort and they are applied to the most serious offences. Where

administrative sanctions are available, criminal sanctions are usually used where the administrative sanctions have failed to change behaviour.

Most cases of criminal prosecution for environmental non-compliance in the period 2010–2018 were for poaching and illegal harvesting of flora species with significant environmental damage (112 of 188 cases, 59.6 per cent), followed by initiating forest fires with significant damage to the environment (43 of 188 cases, 22.8 per cent) (table 2.8).

The following criminal penalties were applied for criminal offences during the reviewed period: deprivation of liberty, correctional works, personal restraint, arrest, criminal fine and engaging the offender in public works. The application of criminal sanctions for environmental non-compliance in industrial activities remains rare as criminal liability for managers of non-compliant companies is set for a few criminal offences only.

## **2.6 Environmental liability, insurance and compensation**

Environmental liability is applied for an activity or inaction causing environmental damage (civil liability) and/or considered an administrative or criminal offence. The civil liability can be applied to both individuals and legal entities and, in most cases, at the same level. The administrative and criminal liability is fault based and applies to guilty individuals and, in cases of legal entities, to their guilty officials.

**Table 2.8: Criminal prosecution for environmental non-compliance, 2010–2018, number**

<b>Criminal offence</b>	<b>Cases</b>
Non-compliance with environmental safety requirements (Art. 193)	4
Non-compliance with requirements on environmental pollution (Art. 196)	3
Non-compliance with requirements on use and protection of soil and subsoil (Art. 197)	11
Damage to and destruction of crops, forest and other plantations (Art. 198)	43
Non-compliance with veterinary and sanitary rules and standards (Art. 200)	2
Non-compliance with requirements on the use of fauna and flora (Art. 202)	112
Non-compliance with requirements on water use (Art. 203)	2
Non-compliance with the regime of protected areas (Art. 204)	11
<b>Total</b>	<b>188</b>

Source: General Prosecutor's Office, 2019.

Administrative and criminal offences in certain areas of environmental non-compliance may involve compensation for damage inflicted on the environment by pollution and waste disposal or the use of fauna and flora in non-compliance with legal and regulatory requirements. The 2018 Resolution of the Cabinet of Ministers No. 820 regulates the calculation and sets differentiated rates for environmental pollution and waste disposal when it exceeds the authorized air emission, wastewater discharge or waste disposal limits. In this case, 74 per cent of compensation payments can be used for carrying out restoration activities as they are transferred to the Fund for Ecology, Environmental Protection and Waste Management within SCEEP (or, in the case of municipal wastewater discharge, to the Fund for Development of Housing and the Municipal Sector operated by the Ministry of Housing and Communal Utilities), while 26 per cent is transferred to the national budget. The 2014 Resolution of the Cabinet of Ministers No. 290 provides for differentiated compensation rates for numerous types of environmental damage to fauna and flora, e.g. for cutting trees in settlements, forests, natural parks, illegal hunting, fishing, hay harvesting and pasturing, etc.

In essence, the environmental liability is imposed by means of administrative or criminal law, meaning that enforcement is confined to actions brought by public authorities. The legislation of Uzbekistan does not include provisions and procedures allowing direct legal action by individuals, NGOs or other private parties, for harm in the form of personal injury,

property damage or economic loss caused by the violation of environmental legislation.

The 1992 Law on Nature Protection sets provisions on compulsory and voluntary environmental insurance and refers to the legislation that should define the scope, procedure and terms of environmental insurance. These provisions on environmental insurance are not yet implemented.

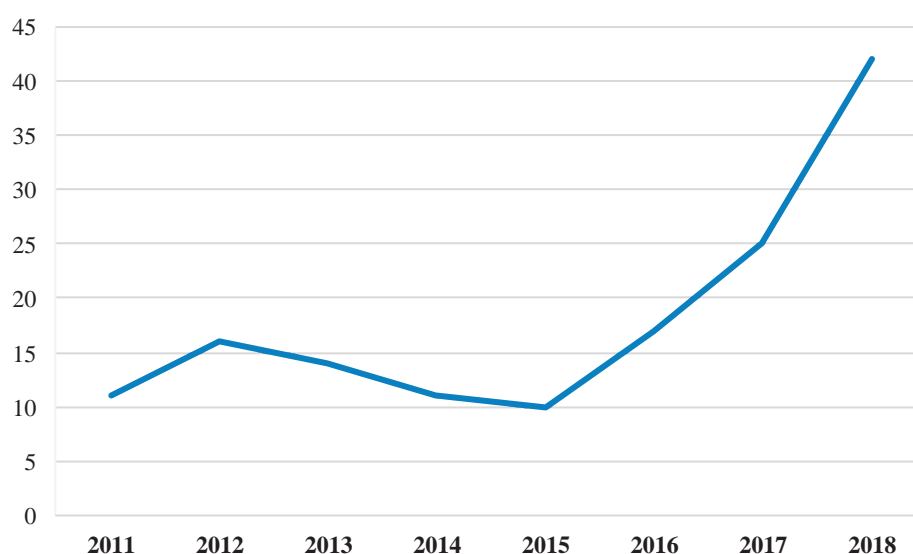
## 2.7 Voluntary compliance promotion instruments

### *Environmental management systems*

As at 31 December 2018, according to the ISO Survey, there were 42 valid certificates for ISO 14001 in Uzbekistan (figure 2.1). According to SCEEP, the mining and smelting plants in Almalyk and Navoyi, refineries in Ferghana and Bukhara, and Knauf Gips Bukhara are among the ISO 14001-certified companies.

The Government's interest in promoting environmental management system (EMS) certification is growing, due to the opening market for foreign investments. Since 2016, the Uzbek Agency for Standardization, Metrology and Certification (Uzstandard) has been accrediting certification bodies for management systems in the country. A number of companies provide services in Uzbekistan to deliver ISO 14001 certification, including SGS Tashkent Ltd, SERT Management, DQS System and SOCOTEC Certification International.

**Figure 2.1: Valid ISO 14001 certificates, 2011–2018, number**



Source: International Organization for Standardization, 2019.



### Labelling

No national environmental labelling scheme existed in 2019. Uzstandard adopted the ISO 14020 series of standards on environmental labels and declarations (as national standards), namely:

- ISO 14020, Environmental labelling: General principles;
- ISO 14021, Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling);
- ISO 14024:1999, Environmental labels and declarations – Type I environmental labelling – Principles and procedures;
- ISO 14025, Environmental labels and declarations – Type III environmental declarations – Principles and procedures.

Certain products and services, including food products, a market and a shop labelled as “ECO” and observed in Tashkent City, are obviously far from fulfilling the criteria set for these eco-labelling schemes. In fact, they are no different from other markets and shops in Tashkent and their products and services are not of higher environmental standards. In this case, the label “ECO” is used to attract more customers but is not based on any eco-certification scheme.

In May 2019 the first ever Regulation on voluntary eco-labelling of products was approved in Uzbekistan (2019 Resolution of the Cabinet of Ministers No. 435) to set rules for eco-labelling of products and prohibit the use of eco-label without a certificate.

### Corporate social responsibility

Numerous companies have declared their commitment to corporate social responsibility (CSR), including

some oil and gas, mining, pharmaceutical and construction companies and a mobile phone operator. A few of them report on relevant activities on their websites and through mass media. Based on such publications, the coverage of environmental consequences of their business operations is at a very low level and, in some cases, they refer to what should be legal requirements on them. The low level of public environmental awareness in Uzbekistan does not provide incentives for companies to integrate environmental aspects of their activities, such as GHG emissions and carbon footprints, MSW separation, using recycled materials and sustainable mobility policies, into their CSR policies.

### Voluntary environmental reporting by companies

As at March 2019, the business environment is lacking established schemes providing incentives for companies to engage in voluntary environmental reporting. The current national policy priority is to reduce the Government’s interventions in the economy. This is an important constraining factor for public authorities wanting to promote voluntary environmental disclosures by companies. Another factor constraining the promotion of voluntary environmental reporting in the country is low engagement in relevant international initiatives such as the Extractive Industries Transparency Initiative (EITI) (chapter 15) and low levels of awareness about such tools as the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises.

The current stand of Uzbekistan vis-à-vis target 12.6 of the 2030 Agenda for Sustainable Development is described in box 2.1.

#### Box 2.1: Target 12.6 of the 2030 Agenda for Sustainable Development



##### Goal 12: Ensure sustainable consumption and production patterns

##### Target 12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

Uzbekistan nationalized global target 12.6 without changes and approved global indicator 12.6.1 (Number of companies that publish reports on rational use of resources) as the national indicator for this target. As at March 2019, even large companies in the country were not involved in the international initiatives on sustainability reporting. However, in January 2019, the President of Uzbekistan, by Resolution of the President No. 4124, requested large mining and smelting companies to report from 2020 on:

- The incorporation of corporate governance disclosure in accordance with principles and standards of the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR);
- Sustainability reporting, including on economic, social and environmental aspects, in accordance with the Global Reporting Initiative (GRI).

The engagement of large Uzbek companies in such global initiatives as ISAR and GRI would be a step towards sustainability reporting and disclosure of relevant information.

## 2.8 Legal, policy and institutional framework

### *Legal framework*

Uzbekistan has an extensive range of laws regarding protection of the environment and the use of natural resources, including the laws on Nature Protection (1992), Water and Water Use (1993), Subsoil (1994/2002), Ambient Air Protection (1996), Protection and Use of Fauna (1997/2016), Protection and Use of Flora (1997/2016) and Ecological Expertise (2000). The conceptual approaches of these laws on regulatory mechanisms have not changed since 2010. However, the Cabinet of Ministers updated procedures, requirements and conditions for the issuance of various permits relating to the environment:

- 2014 Resolution of the Cabinet of Ministers No. 14 approved the Regulation on the order of preparation and approval of draft emission limits, which covers the authorization of air emissions, wastewater discharge, waste generation and disposal limits;
- 2018 Resolution of the Cabinet of Ministers No. 949 approved the new Regulation on State Ecological Expertise, which covers the procedure of issuing the SEE conclusions;
- 2013 Resolution of the Cabinet of Ministers No. 82 approved the Regulation on water use and water consumption, which covers permits for special water use;
- 2014 Resolution of the Cabinet of Ministers No. 290 approved three regulations: two regulations cover the nature use permits (flora and fauna species) and the third regulation covers CITES permits.

The updated implementing regulations address the changed competences of regulatory authorities. Another direction of the development of the regulatory framework is the promotion of an electronic single-window system served by centres of public services operated by the Ministry of Justice (initially, by local executive authorities (khokimiyats)). Certainly, this single-window system makes life easier for businesses and also prevents abuses by civil servants. As at March 2019, these centres manage a limited number of permits relating to the environment, namely, nature use permits on flora species, water abstraction permits and permits for cutting trees and shrubs outside the state forest fund. Furthermore, some other permitting procedures and conditions were also reconsidered, to reduce the administrative burden on business, in particular small businesses.

The new 2018 Regulation on State Ecological

Expertise (2018 Resolution of the Cabinet of Ministers No. 949) was adopted in place of the 2001 regulation. The new Regulation contains a reduced list of activities requiring EIA. Also, the new legislation provides much shorter time limits for review of the EIA and emission limits by the SEE authorities. A revision of the legal framework for SEE is envisaged in the coming years (2019 Decree of the President No. 5863).

The 2012 Law on the Permitting Procedures in Business Activities aims at limiting permits and licences required for business. The 2013 Resolution of the Cabinet of Ministers No. 225 defines the exhaustive list of permits, including for ODSs and the use of natural resources and underground resources, and prohibits the introduction of new permits not provided by the 2012 Law.

The 2013 Law on Environmental Control expands and governs in much greater detail relations concerning the environmental compliance review. Further, the Cabinet of Ministers approved (by 2014 Resolution of the Cabinet of Ministers No. 216 and 2015 Resolution of the Cabinet of Ministers No. 286) a number of regulations and guidance documents (model provisions) for the implementation of requirements of the Law on different types of environmental control. The approved documents include:

- Regulation on the Procedure of Conducting State Environmental Control;
- Model Provisions on the Procedure of Conducting Internal Environmental Control;
- Model Provisions on the Procedure of Conducting Environmental Self-Monitoring;
- Model Provisions for Environmental Service (of public authorities and companies).

As at March 2019, the procedure for conducting inspections and detecting administrative offences is prescribed by the 1998 Law on State Control of Activities of Economic Entities and the 2000 Regulation on Procedure for Conducting Inspections and Maintenance of the Register of Inspections. The system of inspections was reconsidered in 2018 and the National Council for the Coordination of Enforcement and Control has ceased its activities as the supervisory body since April of that year. In July 2018, the President of Uzbekistan cancelled scheduled inspections from 1 September 2018 and replaced them with inspections based on risk assessment in combination with complaint-based inspections (2018 Decree of the President No. 5490). Both types of inspection require prior consent by the supervisory body (initially this role was filled by the General Prosecutor's Office and from 1 April 2019 by the

Business Ombudsperson). Also, the 2018 Decree of the President No. 5490 lists the types of inspections that are required to notify the supervisory body and be registered in the united registry of inspections. In September 2018, the General Prosecutor approved the temporary Regulation on the procedure of receiving consent and conducting inspection checks of business entities by enforcement authorities (2018 Order No. B-55).

Since 2010, amendments were introduced to several environment-related articles of the 1994 Code on Administrative Liability (Articles 65, 70, 72, 74, 75, 76, 77, 81, 82, 91, 161, 163<sup>1</sup>). In most cases, the changes related to the increase in the scale of penalties, but in a few cases, the content of the offence was amended. Several new articles were introduced related to offences in waste management (Articles 91<sup>1</sup>, 91<sup>2</sup>, 91<sup>3</sup>), breach of rules for the provision of water supply and sanitation services (Article 163<sup>2</sup>) and breach of rules for sediment control and riverbank stabilization (Article 70<sup>1</sup>). Nevertheless, penalties for environment-related offences remain extremely low. For example, for destruction of Red Book fauna species, citizens are sanctioned only to the level of 0.5–2 minimum salaries (US\$12–US\$48), whereas, for illegal logging, citizens are sanctioned only to the level of 0.33–1 minimum salary (US\$8–US\$24).

In the period 2010–2018, sanctions were amended in all environment-related articles of the 1994 Criminal Code (Articles 193–204), and the content of several environment-related crimes was modified (Articles 198, 200, 202, 204). Sanctions in the Criminal Code are generally proportionate. One new crime was introduced in March 2019 – inaction to prevent unauthorized occupation of irrigated land (Article 197<sup>1</sup>).

### *Policy framework*

The 2017 Action Strategy on Five Priority Directions for Development for the period 2017–2021 defines as key tasks: reduction of the Government's interventions in the economy; strengthening the protection of private property; and incentivizing the development of small business and private enterprises. The main strategic goals of this reform are to provide favourable conditions for business activities, attract foreign investments and, by 2022, reach the level of inclusion in the top 20 countries in the Doing Business report of the World Bank and International Financial Corporation.

The Concept of Administrative Reform (2017 Decree of the President No. 5185) sets a number of policy

measures for the future to implement these strategic goals and tasks:

- Reduction of excessive administrative regulation with the reorientation of governmental executive bodies from struggling with consequences to addressing sources and conditions of current challenges;
- Transfer from enforcement by governmental bodies to public control in some areas of regulation;
- Reduction of the scope of procedures for issuing licences and permits and promotion of voluntary compliance instruments (such as mandatory liability insurance, declaration of conformity).

Further, the 2018 Resolution of the President No. 3852 sets measures to improve the investment climate in relation to proposed new activities and construction, including:

- Providing lands to legal entities for permanent use without a specified purpose and by stipulating prohibited types of construction activities on a given land plot;
- Reconsidering the list of activities that are subject to review by SEE;
- Cancelling the requirement on the review of SEE for certain activities with local environmental effects regardless of their environmental impact.

The policy framework relies too much on self-regulation by companies and it lacks clearly defined objectives of environmental protection and sustainable development to be implemented by public authorities, including by the application of SEA, EIA, regulatory and enforcement tools. Furthermore, the current policy priorities of industry self-regulation and voluntary environmental compliance by companies entailed, in some cases, more regulatory pressure on individuals, e.g. increased attention by enforcement authorities on MSW or tree-felling violations. The current policy is based on the assumption that government regulation and enforcement is an administrative burden for business development. It does not address how it can be used to achieve some other objectives of government policy such as the competitiveness of Uzbek companies on international markets with growing demands for sustainable production and services.

The recently adopted Concept on Environmental Protection until 2030 (2019 Decree of the President No. 5863) envisages a range of measures in the field of environmental regulation (SEE and certification) and state environmental control. These measures include the revision of legislation on SEE, transition

to the use of BAT, transition from the method of individual determination of environmental standards to setting general standards for industrial sectors and the introduction of international standards on environmental management systems (EMS). Effective implementation of these measures would certainly contribute to improving environmental regulation and ensuring compliance with environmental legislation.

### *Institutional framework*

The key governmental body performing the environmental regulatory and enforcement functions in Uzbekistan is SCEEP. Its competence covers SEE/EIA, pollution prevention and control, use and protection of fauna and flora outside the forest fund, ODSs, water abstraction from natural water objects, and construction and operation of underground facilities for waste storage and disposal, as well as promotion of voluntary environmental compliance instruments.

A number of subordinated organizations and departments of SCEEP deal with environmental assessment, permitting, inspection and enforcement (figure 1.2), including:

- Centre for State Ecological Expertise – EIA and approval of emission limits documented as SEE conclusions;
- Centre for Specialized Analytical Control on Environmental Protection (CSAC) – monitoring of air emissions and wastewater discharges by certain large installations;
- Centre for State Ecological Certification and Standardization – eco-certification;
- Inspectorate for Control in the field of Ecology and Environmental Protection – inspection and enforcement, issuance of permits on wild fauna and flora and for cutting trees in settlements;
- Department of Air Protection – permitting on ODSs.

At the regional level, SCEEP is represented by territorial departments on ecology and environmental protection and centres of SEE of the Republic of Karakalpakstan, oblasts and the City of Tashkent. At the local level it is represented by inspectorates of districts and towns (figure 1.1).

Environmental regulation (permitting and approval of SEE conclusions) and enforcement (inspection) functions are not always separated in Uzbekistan. In most cases, permitting and inspection is done by different sub-units of SCEEP, but this is not always the case. The flora- and fauna-related permits issued by SCEEP are issued by its Inspectorate for Control in the

field of Ecology and Environmental Protection, which also does the inspection checks. Furthermore, as the moratorium on inspections reduced the workload of inspectors, heads of territorial departments on ecology and environmental protection of the Republic of Karakalpakstan, oblasts and the City of Tashkent could redistribute the work on permitting and inspection among various departments, without always observing the separation of regulatory and enforcement functions. In such cases, the lack of clear separation of regulatory and inspection functions potentially creates conflict of interest and opportunities for abuse.

All inspections by enforcement authorities in Uzbekistan require approval by or prior notification of the Business Ombudsperson. Its Unit on Coordination of Inspection of Activity of Business Entities (8 staff members) serves these activities at the national level. Territorial offices in the Republic of Karakalpakstan, oblasts and the City of Tashkent (3–4 staff members in each office) assist the Business Ombudsperson to deal with issues at the regional level. Before 1 April 2018, the National Council for the Coordination of Enforcement and Control supervised the inspections and for one year (between 1 April 2018 and 1 April 2019) the General Prosecutor's Office performed these supervisory functions.

The Ministry of Water Management issues permits for special water use for irrigation. The Department of Water Use and Implementation of Water Saving Technologies issues permits at the national level, while 12 basin irrigation system administrations (BISAs), the Ministry of Water Management of the Republic of Karakalpakstan and 43 irrigation system administrations (ISAs) issue permits at the subnational level (chapter 9).

At the end of 2018, the State Inspectorate for Control and Supervision over the Technical State and Safety of Large and Particularly Important Water Management Infrastructure (Gosvodkhoz nadzor) was transferred from the Ministry of Emergency Situations to the Ministry of Water Management. It had been moved from the Cabinet of Ministers to the Ministry of Emergency Situations in June 2017. The State Inspectorate inspects 273 dams and other hydrotechnical installations to determine their hazard potential and reviews the design and construction of new and reconstructed dams. As at March 2019, the Inspectorate had 15 staff members at the national level and three staff members per region.

The State Committee on Geology and Mineral Resources (Uzbekgeology) issues licences for mining of mineral resources, except for oil and gas, precious



and rare metals, gemstones and uranium. It issues permits for drilling wells and permits for special use of groundwater. The Licensing Unit and the Permission Procedure Unit of Uzbekgeology deal respectively with licensing and permitting issues at the national level. The Inspectorate for Control of Mining and Geological Activities, a subordinated organization of the State Committee, licences mining of metallic mineral resources at the national level and its oblast departments provide licences for mining non-metallic mineral resources. The Inspectorate and five regional inspectorates (which each cover two to three oblasts) conduct inspection and enforcement on compliance with requirements on protection of mineral resources. The issuance of permits for special water use on groundwater and drilling wells is the responsibility of 14 territorial hydrogeological stations of Uzbekhydrogeology (a subordinated organization of the State Committee) at the regional level. The hydrogeological stations also conduct activities at the regional level on monitoring of compliance with requirements on protection of groundwater, and enforcement in cases of their violation.

The State Committee on Industrial Safety is responsible for the licensing, inspection and enforcement of mining of precious and rare metals, gemstones and uranium, as well as of activities in the production, use, storage, maintenance, transportation, processing and disposal of radioactive materials. This governmental body has a central office and territorial departments in the Republic of Karakalpakstan, oblasts and City of Tashkent, as well as the Almalyk, Angren and Kyzylkum mining and technical inspectorates.

The State Committee on Forestry issues permits for special use of plants and monitors compliance with the legislation on the lands of the state forest fund, including on subordinated national natural parks and hunting grounds. Its 10 territorial departments in the Republic of Karakalpakstan and oblasts issue permits on special use of plants at the regional level. The Department of National Natural Parks and Hunting Grounds of the State Committee on Forestry performs monitoring of compliance and enforcement at the national level, while the administrations of hunting grounds do so at the local level.

The institutional framework in Uzbekistan is undergoing a process of reform, with regular changes of the names of public authorities, their competences and subordination. This has led to inconsistencies in governmental regulatory and enforcement activities, e.g. coordination of the inspection procedures was performed for one year by the General Prosecutor's Office before being transferred to the Business

Ombudsperson. Gosvodkhoznadzor (initially under the Cabinet of Ministers) was subordinated for approximately one year to the Ministry of Emergencies and then became part of the Ministry of Water Management. In some cases, subsidiary legislation refers to various public authorities with regard to the same permit or licensing procedure and there is a lack of clarity for regulated entities and the public on which authority deals with regulatory functions in a certain area.

#### Information on regulatory and compliance assurance activities

Some information on issued permits in the environmental area is available in the Open Data Portal, which has been in operation since 2015. However, the information presented does not cover all permits and, in most cases, the data are three to four years old.

With regard to information on the outcomes of environmental enforcement activities (i.e. inspections), such information is submitted to SCEEP's Joint Information and Analytical Department at the central level and to the relevant units of SCEEP's territorial departments at oblast level. There is no practice to publish the data on the outcomes of inspection activities. SCEEP does not transmit such data to statistical authorities.

No rules exist for reporting by public environmental inspectors on their activities.

## **2.9 Assessment, conclusions and recommendations**

### *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

### 3.1 Greening the tax and tariff system

#### *Pollution charges*

The basic features of the system of pollution charges applied in Uzbekistan have remained unchanged since 2009. Pollution charges are applied to: (i) emissions of air pollutants from stationary and mobile sources; (ii) discharges of water pollutants into natural water bodies and communal sewerage networks and onto land; and (iii) generation of waste. The tax base is the volume (in tons) of emissions, effluent discharges and waste generated. The tax base for emissions of air pollutants from mobile sources (vehicles) is the fuel consumption, measured in tons. The number of pollutants covered by the system is very large, namely, 171 air pollutants for emissions from stationary sources and 84 water pollutants for the discharge of effluents. Charge rates for emissions of air pollutants from mobile sources are applied only to transport vehicles owned by enterprises and related to consumption of nine different fuel types. Charges for waste generation distinguish various categories of toxic and non-toxic waste. Waste that is recycled is not subject to the pollution charge. Waste generation taxes are distinct from the fees to be paid for waste collection, transport and disposal. Legal entities that are fully financed from the state budget are exempted from the payment of pollution charges.

Base tax rates apply to emissions of pollutants up to annual maximum emission limits (“norms”) specified

for each enterprise; these emission limits are, in general, subject to review every three years. Pollution above the established norms is subject to higher charges, which can be up to 10 times the base rates, depending on the size of excess pollution. Conversely, emissions below the annual limits benefit from a “bonus coefficient”, which leads to lower payments.

Pollution charge rates remained unchanged between 2006 and 2016 against the backdrop of high cumulative inflation (187 per cent measured by the average annual Consumer Price Index (CPI)), which eroded any financial incentives for pollution abatement measures from the pollution tax. Against this background, the Government raised all tax rates by 100 per cent in 2017 compared with 2016. Since the beginning of 2019, pollution tax rates are indexed to the official monthly minimum wage. Tax rates are now calculated by multiplying a pollutant-specific coefficient with the level of the minimum wage, which amounts to 202,730 sum (US\$24) since the beginning of 2019. This implies a further increase of all pollution tax rates by 135 per cent compared with the level applicable in 2018 (table 3.1). Adjusted for inflation, i.e. in real terms, tax rates in the first quarter of 2019 were only some 10 per cent above their level in 2006. Given that the minimum wage has been regularly adjusted upwards during the past decade, this indexing scheme should provide better protection of pollution tax rates against erosion through inflation.

**Table 3.1: Air pollution charges for emissions from stationary sources, 2016–2019, sum/ton**

Pollutants	Sum/ton			US\$ /ton 2019
	2016	2017–2018	2019	
NO <sub>2</sub>	491.4	982.8	2 311.1	0.27
NO <sub>x</sub>	327.6	655.2	1 540.7	0.18
Ammonia	491.4	982.8	2 311.1	0.27
Sulfuric anhydride	390.0	780.0	1 844.8	0.22
Hydrogen chloride	101.4	202.8	486.6	0.06
Propylene oxide	2 457.0	4 914.0	11 575.9	1.37
Styrene	9 828.0	19 656.0	46 263.0	5.47
Phenol	6 552.0	13 104.0	30 855.5	3.65

Source: 2018 Resolution of the Cabinet of Ministers No. 820; 2016 Resolution of the President No. 2699; 2006 Resolution of the Cabinet of Ministers No. 15.

Notes: Selected pollutants.

Monthly minimum wage since 1 January 2019 = 202,730 sum (US\$24).

Exchange rate: US\$1 = 8,451.4 sum (central bank rate, 9 April 2019).

The significant increases in pollution charge rates have enabled the broad reversal of their erosion through cumulative inflation during the past decade. But the authorities have never examined the environmental effectiveness of the overall system of pollution charges in terms of creating meaningful incentives for pollution abatement based on comparisons with the corresponding pollution abatement costs. Such an exercise is also exceedingly complex and hardly meaningful for such a large number of pollutants. The system is, moreover, administratively complex and onerous for both enterprises and the government administration. It is also impossible to target pollution charges for such a large number of pollutants at specific environmental goals.

The central function of the scheme is to generate revenue for the financing of environmental protection projects by the national environment fund and for the general government budget. Total revenue collected from pollution charges amounted to 14.1 billion sum (US\$1.75 million) in 2018, up from 3.2 billion sum in 2010. This strong revenue growth reflects the combined effect of increasing levels of economic activity and the associated higher volumes of pollution and the doubling of tax rates in 2017, when revenues rose by 56 per cent compared with 2016 (table 3.2). While this represents a relatively important source of revenue for financing environmental protection measures, total annual revenue corresponded, on average, to only some 0.01 per cent of total general government revenue during the period 2015–2018. The tax on waste generation has been the major source of revenue during the past decade; its share in total revenue rose to some 57 per cent in 2018 compared with some 30 per cent for the tax on discharges of polluted wastewater. It should be noted that the strong growth of pollution tax revenues in terms of national currency units is not reflected in the annual revenue figures converted into United States dollars, due to the

continuous depreciation of the sum, which was most pronounced when the exchange rate of the sum was liberalized in September 2017 (table 3.2).

#### *Vehicle-related taxes*

##### Excise duties on motor fuels

Uzbekistan levies excise duties on oil products (gasoline, diesel, jet fuel, LPG) and natural gas, which are divided into taxes paid by domestic producers of these products and those paid by final consumers. Excises paid by domestic producers are ad quantum (per ton) for gasoline, diesel and jet fuel. Tax rates for gasoline are differentiated by octane ratings (80, 91–93, 95). Tax rates per ton for standard diesel are some 15 per cent to 33 per cent lower than for gasoline, depending on the gasoline octane rating.

Uzbekistan operates three state-owned refineries processing mostly domestically produced oil, supplemented by imports of gasoline from the Russian Federation. Many motor vehicles have been converted to run on LPG, which is often easier to obtain. Excises for natural gas and liquefied gas are set ad valorem, i.e. as a percentage of the sales value (excluding taxes) per m<sup>3</sup>. Tax rates for all oil products were reduced by 90 per cent effective 1 January 2018; at the same time, the rate for natural gas was lowered from 25 per cent to 15 per cent. As a result, tax rates on motor fuels paid by refineries are quite low, e.g. ranging from 32,143 sum (US\$4) per ton of gasoline with RON 80 to 40,889 sum (US\$5) per ton of gasoline with RON 95. The rate for diesel fuel ranges from 27,340 sum (US\$3.4) to 28,425 sum (US\$3.5) per ton. The background for this drastic reduction of excise rates was the liberalization of the exchange rate of the national currency in September 2017, which led to a sizeable depreciation of the sum with associated upward pressure on import prices of oil products.

**Table 3.2: Revenues from payments of pollution charges, 2015–2018**

	2015	2016	2017	2018
<b>Total (billion sum)</b>	<b>8.65</b>	<b>9.58</b>	<b>14.93</b>	<b>14.13</b>
of which: (as %)				
Emissions of air pollutants – stationary sources	24.55	24.39	26.28	10.51
Emissions of air pollutants – mobile sources	2.58	2.31	1.41	1.59
Discharge of wastewater into water bodies and onto land	19.63	19.88	18.67	22.17
Discharge of wastewater into communal sewerage systems	8.95	9.79	8.02	8.31
Waste disposal	44.28	43.62	45.62	57.41
<b>Total as percentage of general government revenue</b>	<b>0.01</b>	<b>0.01</b>	<b>0.02</b>	<b>0.01</b>
<b>Total (US\$ million)</b>	<b>3.35</b>	<b>3.21</b>	<b>2.87</b>	<b>1.75</b>

*Source:* State Committee on Ecology and Environmental Protection; International Monetary Fund (IMF) World Economic Outlook Database, April 2019.

*Note:* Figures in United States dollars were calculated using the average annual exchange rate for the corresponding year.

The other levy (besides value added tax (VAT)) on motor fuels is a tax on consumption of gasoline, diesel fuel and liquid gas, which is paid by final consumers. As of 1 January 2019, this tax has been reclassified as an excise tax. Tax rates are the same for gasoline and diesel fuel. In a similar vein as for the tax levied on domestic producers, tax rates were lowered drastically – by 50 per cent – effective 1 January 2018, to cushion upward pressures on product prices due to higher import costs associated with the adverse exchange rate developments. But the reduction in tax rates was partly reversed in 2019, when rates were raised by some 22 per cent (table 3.3). But tax rates are very low at 285 sum (US\$0.03) per litre for gasoline, diesel and LPG.

Final sales prices of domestically produced motor fuels are regulated by the Government and subsidized. But against the backdrop of increasing reliance on imports of crude oil and petroleum products, the Government has started to gradually phase out the subsidization of domestic fuel prices. In mid-November 2017, the Government raised prices of gasoline with an octane rating of 80 and of 91 by some 40 per cent and diesel fuel by some 70 per cent. For gasoline, the excise tax corresponds to some 6–7 per cent of the regulated price per litre, depending on the octane rating. The excise on diesel fuel accounts for some 6 per cent of the sales price. Costs arising from price control are mainly borne by the three state-owned refineries through the setting of prices that are not cost reflective. The Government continues to provide financial support for the purchase of motor fuels to “certain categories of persons defined by law”, which was raised to 66,700 sum (about US\$8) per month in November 2018. Effective mid-November 2018, the Government decided to liberalize prices of imported higher quality fuels, such as gasoline with

octane ratings from 92 to 98. There is a sizeable gap between the administrated fuel prices and the higher market prices. To illustrate, since mid-November 2018, the regulated price per litre of gasoline (AI-91) was 4,500 sum (US\$0.53) compared with a market price of gasoline (AI-92) of 6,900 sum (US\$0.82). Accordingly, the proportion of excise taxes in the final sales price of higher quality fuels is much lower. Thus, for gasoline with an octane rating of 95, the price per litre is 7,800 sum (US\$0.93), of which less than 4 per cent is accounted for by the excise tax.

#### Excises on production and imports of road motor vehicles

The Government imposes an excise tax on the production of passenger cars by General Motors Uzbekistan (GMU), which has a domestic monopoly. The state-owned vehicle holding company Uzavtosanoat has a 75 per cent stake in GMU and the remaining 25 per cent is owned by General Motors. The tax base is set as a percentage (ad valorem) of the sales value, excluding excise tax and VAT. The tax is not differentiated based on technical characteristics of cars such as engine types (petrol or diesel), engine size and emission standards. Between 2012 and 2017, when the tax rate amounted to 29 per cent, the main function of the tax was to generate government revenue; another function was to restrain domestic demand, and to provide scope for vehicle exports and associated generation of hard currency income. In the face of deteriorating economic competitiveness and weakening domestic demand faced by GMU, the excise rate was reduced from 29 per cent to 5 per cent (in 2018), then to 3 per cent as of the beginning of 2019 and cancelled for sales contracts concluded after 1 October 2019.

**Table 3.3: Consumption tax on motor fuels, 2017–2019**

Fuel type	Tax base	Sum			US\$ 2019
		2017	2018	2019	
Sales at petrol stations					
Petrol	litre	465	233	285	0.03
Diesel fuel	litre	465	233	285	0.03
LPG	litre	230	230	285	0.03
CNG	m <sup>3</sup>	275	305	360	0.04
Sales outside petrol stations					
Petrol	ton	617 000	308 500	378 480	44.78
Diesel	ton	565 000	282 500	346 275	40.97
LPG	ton	..	436 360	540 645	63.97

Source: 2018 Resolution of the President No. 4086 (Annex 19); and similar resolutions for earlier years.

Notes: Effective 1 January 2019, the consumption tax is officially replaced by a corresponding “excise tax”. The tax base for sales of petrol, diesel and LPG at petrol stations is 1 litre.

For sales outside petrol stations, the tax base is 1 ton.

Effective 2018, these tax rates also apply to sales of these products for purposes other than motor fuels.

Exchange rate: US\$1 = 8,451.4 sum.

Excise tax is also imposed on imports of all kinds of road motor vehicles (passenger cars, buses, vehicles for transport of goods), in addition to standard customs duties. The excise tax on imports of passenger cars is differentiated by type of engine (petrol or diesel), engine size (in cc) and age of the vehicle (i.e. new or used). The tax base is the engine size in terms of cc. Differences in tax rates between petrol engines and diesel engines are relatively small. However, tax rates per unit of engine size (cc) increase significantly with the age of the vehicle, compared with rates for new cars. (Cars are legally treated as “new” up to the age of 3 years.) To illustrate, for the mid-range petrol engine size (1500 cc to 1800 cc), the tax rate amounts to US\$2.6/cc for a new vehicle; the rate increases to US\$3.5/cc (vehicle age 3–5 years); US\$4.8/cc (vehicle age 5–7 years) and US\$7.2/cc for vehicles more than 7 years old.<sup>8</sup> Excises on imports of buses (motor vehicles designed to carry 10 people or more) and most categories of vehicles for the transport of goods amount to 70 per cent of the customs value plus a surcharge of US\$3 per unit (cc) of engine size. Current tax rates for these categories do not change with the age of the vehicle. The excises (and customs duties) on imports of road motor vehicles are an example of the Government’s long-standing economic policy based on export-oriented and import-substituting industrialization.

Effective 1 January 2019, two new categories of excises on car imports were introduced: (i) electric cars; and (ii) cars with traditional engines with a customs value of more than US\$40,000 (“luxury cars”) with an age up to 2 years. Both categories of

cars are subject to an excise tax of 20 per cent of customs value, but they are exempted from import duty.

#### Vehicle registration fees

Imports and domestic purchase of motor vehicles are subject to a one-off fee to be paid when the vehicle is registered with the Ministry of Internal Affairs. From 2009 and up until 2014, the fee was expressed as a percentage of the monthly minimum wage but did not distinguish between the types and categories of vehicle. Fee rates declined with the vehicle age, ranging from 5 per cent of the minimum wage for vehicles with an age of 7 years and higher, to 10 per cent per horsepower unit for vehicles aged up to 3 years. Effective as of 2015, the fee distinguishes three different types of motor vehicles (passenger motor cars; motorcycles; other motor vehicles). For new vehicles, a separate fee, which corresponds to 3 per cent of the sales value (excluding VAT), was introduced (table 3.4). Effective 1 October 2019, in the case of domestically produced vehicles, this fee is paid by vehicle manufacturers. For used vehicles, the charge rate continues to depend on the age of the vehicle and the horsepower of the engine. Fee rates for used vehicles have been increased since 2015 but continue to be inversely related to the age of the vehicle. In 2016, revenues from these fees amounted to 463 billion sum (some US\$155 million at the average annual official exchange rate of that year). Revenues collected are allocated to the Republican Road Fund.

**Table 3.4: Vehicle registration fees**

Vehicle category	Vehicle age	Tax base	Tax rate (%)
All	New	Sales value	3
Passenger cars	< 3 years	MW per unit of HP	11
	3–7 years	MW per unit of HP	9
	> 7 years	MW per unit of HP	6
Motorcycles	< 3 years	MW per unit of HP	10
	3–7 years	MW per unit of HP	7
	> 7 years	MW per unit of HP	5
Other motor vehicles	< 3 years	MW per unit of HP	16
	3–7 years	MW per unit of HP	13
	> 7 years	MW per unit of HP	9

Source: 2017 Resolution of the President No. 3454 (Annex 22).

Notes: MW = minimum wage (monthly); HP = horsepower. Charge rates effective 1 January 2018.

<sup>8</sup> Imports of cars produced in Kazakhstan, the Russian Federation and Ukraine, with which Uzbekistan has concluded a free trade agreement, are not subject to customs

duty (subject to presentation of a certificate of origin), and the excise tax amounts to 2 per cent of customs value for cars aged up to 3 years.



*Road user fees*

Uzbekistan does not apply road user fees, but there is a fee for entry into and transit through the territory by vehicles registered in foreign countries. These revenues, which amounted to 42.1 billion sum (US\$14.1 million) in 2016, are allocated to the Republican Road Fund.

*Land tax*

Legal entities and individuals that either have property or ownership or user rights, or are leasing land, are subject to land tax.

The basic distinction for land tax purposes is between agricultural land and land for use in cities and rural areas for non-agricultural purposes. Tax rates per ha or m<sup>2</sup> depend on the location and quality of land, including access to water supply to each land plot, notably for irrigation of agricultural land. Land plots that are used for construction of projects included in the national strategic investment programmes are exempted from the tax during the period of construction. In the case of deterioration of the quality of agricultural land caused by the owner or user of the land, the tax rate applied is the one applied before the deterioration occurred. Effective 1 January 2019, land tax rates were revised, with an increase of some 20 per cent. At the same time, the land tax has also been imposed on micro- and small enterprises subject to a simplified tax regime (“single tax payers”) that own, use or are leasing a land plot of more than 1 ha; previously, they did not generally pay any land tax.

Provisions for punitive tax rates on land plots occupied by unfinished construction objects exceeding the established normative period for finishing the construction were abolished, effective 1 January 2019. The same holds for punitive rates on land plots occupied by vacant buildings and unused production space. Revenues from land tax paid by legal entities are allocated to the state budget; taxes paid by individuals are allocated to the corresponding local authorities. Overall total revenues collected amounted to 1,414.5 billion sum (US\$181 million) in 2018. Taxes paid by legal entities are revenue of the central government budget; taxes paid by individuals are allocated to local budgets.

*Property tax*

Property tax is imposed on legal entities and individuals. For legal entities, the tax base is the net book value of the immovable property. As of 1 January 2018, movable property, such as machinery and equipment and other fixed assets, is no longer

subject to property tax. Property tax for individuals is payable on residential houses and apartments and other buildings. Up until 2017, the tax base was the inventory value of the property. Effective 1 January 2018, the tax base was changed to cadastral value, which is normally higher than the inventory value because it is closer to the market value. In any case, for both legal entities and individuals, the property tax does not have an environmentally relevant tax base.

*Fees for use of natural resources*Water use tax

The abstraction of water from natural sources is subject to payment of a water use tax. Payers are legal entities, individual entrepreneurs and dekhkan farms (partially commercial small farms based on a household plot), which use water from surface or underground sources for their economic activities. Tax rates per m<sup>3</sup> of water depend on the type of water source and the kind of economic activity. Rates have been raised significantly in recent years, the major motive being to create incentives for more efficient use of water resources. To illustrate, rates for surface water use by power stations in 2019 are nearly 70 per cent higher than in 2015. Also, a separate tax category was established in 2015 for enterprises that use water for production of non-alcoholic beverages; the corresponding tax rate per m<sup>3</sup> has risen by 90 per cent since then (table 3.5). Moreover, as of 2019, a separate tax rate was introduced for industrial enterprises and for vehicle washing stations, thus removing an existing implicit water consumption subsidy. Tax rates for surface water use for industrial enterprises rose from 61.9 sum per m<sup>3</sup> in 2015 to 360 sum per m<sup>3</sup> in 2019. From the beginning of 2019, small businesses with a turnover of up to 1 billion sum (some US\$120,000) are also subject to the water use tax.

Water used for irrigation in agriculture, which accounts for some 90 per cent of total water use, is not subject to taxation, but there are water withdrawal limits. The tax is only applied to dekhkan farmers. The operation and maintenance of large-scale irrigation and drainage systems are financed from the state budget. A large part of these expenditures is accounted for by the costs of electricity for operating the large number of water pumping stations. Water user associations (WUAs) organize the management of water resources at the level of farms. Among the main responsibilities of these associations is the setting and collecting of irrigation service fees. The revenues from these fees are designed to finance, among other things, the maintenance, rehabilitation and improvement of the irrigation systems within their corresponding operational area. But this has turned out to be a

challenge for many of these associations, which struggle to ensure the financial sustainability of their operations. Given that many farmers are lacking the financial resources to pay for these services, these payment schemes have been largely ineffective. In the event, water has been essentially free for many farmers.

There are a number of other tax exemptions, which weaken incentives for more rationale use of water. Water utilities can abstract water for the production of drinking water for the population free of charge; they only have to pay for water resources used for their own needs. This implies that technical water losses do not enter into their operating costs. HPPs that use water

for the operation of hydraulic turbines are also exempted from the tax; but the water resources used by HPPs can be considered as renewable, i.e. there is effectively no consumption of water. In a similar vein, there is a tax exemption for TPPs that charge water back into the water body. Also, water used to wash saline agricultural land is exempted. The water abstraction infrastructure is very old, and there is a pervasive lack of adequate water metering devices; large volumes of water abstracted are unaccounted for or roughly estimated. Revenues from the water resources tax amounted to 140.4 billion sum (US\$18 million) in 2018; these revenues are allocated to local governments, but they are not earmarked for the financing of water sector infrastructure management.

**Table 3.5: Tax on water use, 2015, 2019, sum/m<sup>3</sup>**

Water users	Surface water		Groundwater	
	2015	2019	2015	2019
Power stations	17.9	30.0	26.6	50.0
Utilities	34.0	60.0	43.9	80.0
Producers of soft drinks	10 000.0	19 040.0	10 000.0	19 040.0
Vehicle washing stations	..	1 200.0	..	1 500.0
Industrial enterprises*	61.9	360.0	78.6	430.0
Other economic sectors**	61.9	120.0	78.6	150.0

Source: 2018 Resolution of the President No. 4086 (Annex 14); 2014 Resolution of the President No. 2270 (Annex 14).

Notes: \* Industrial enterprises, except those indicated above.

\*\* Enterprises in all economic sectors, except those indicated above, including individual entrepreneurs using water in the process of doing business and dekhon farms.

**Photo 3: Stormwater channel in Samonids Park, Bukhara City**



Photo credit: Ms. Alessandra Fidanza

### Tax on use of subsoil resources

Uzbekistan is among the world's largest producers of gold and uranium, and its mining industry also exploits a large variety of other minerals, such as gas, copper, coal and silver. Exploration and mining rights are granted based on subsoil use licences, which are allocated to subsoil users through tenders or direct negotiations. In practice, priority in providing mining rights with respect to large deposits of strategic minerals, such as gold, silver, copper and uranium, has been given to two major state-owned mining companies, the Navoiy Mining and Metallurgical Combine (NMMC) and the Almalyk Mining and Metallurgical Combine (AMMC), or to joint ventures involving them.

The use of subsoil resources is subject to payment of special charges and taxes, which comprise, besides the subscription bonus and the commercial discovery bonus, the subsoil use tax and an excess profit tax.

The subsoil use tax has as its tax base the average weighted market value of the mineral resources produced during the reporting period (quarter or year). These percentage shares range from 4 per cent for coal to 30 per cent for natural gas. The percentage shares for gold, silver and copper were raised considerably between 2015 and 2019 (table 3.6). The utilization of by-products received during extraction of the main natural resources is subject to a tax rate of 30 per cent. Total government revenue from the subsoil use tax amounted to 7,934 billion sum (about US\$1 billion) in 2018. The excess profit tax is levied on a limited number of minerals (natural gas, copper, cement clinker and polyethylene granules). Excess profit is defined as the difference between the net sales revenue (based on existing market prices) and the revenue that

would have been earned at the (lower) statutory prices established by the legislation. The tax rate applied to this excess profit is 50 per cent. Entities operating under production-sharing agreements are exempt from the excess profit tax. Revenues from the excess profit tax amounted to 1,736 billion sum (US\$215 million) in 2018.

The Government mainly levies all these charges in order to appropriate part of the economic rents associated with the exploitation of these natural resources. The influence of these taxes on resource management is limited. The challenge of managing the resource wealth is to design a strategy that takes into consideration the average mineral reserves-to-production ratios (estimated at 20–30 years in 2012) and the revenue dependency ratio, which approached the threshold of 20–25 per cent of total fiscal revenue in 2012, according to the 2013 IMF Country Report. Improved efficiency of natural resource use and greater economic diversification would result in reduced pressure on scarce natural resources and reduce risks to sustainability.

Revenues from mineral resource exploitation are managed through the Uzbekistan Fund for Reconstruction and Development, a sovereign wealth fund, which was created in 2006. Its main objectives are to: (i) accumulate revenue in excess of the established cut-off prices on mineral resources (mainly gold and copper); and (ii) stimulate investment and economic development by extending long-term loans to banks for co-financing of selected strategic government projects. A large part of the accumulated financial assets is managed abroad by the central bank as part of the international reserves.

**Table 3.6: Tax on extraction of subsoil resources, 2015, 2019, percentage of market value**

<b>Product</b>	<b>2015</b>	<b>2019</b>
Natural gas	30.0	30.0
Coal	4.0	4.0
Copper	8.1	15.0
Tungsten concentrate	10.4	10.4
Uranium	10.0	10.0
Gold	5.0	25.0
Silver	8.0	25.0
Precious and semi-precious stones	24.0	24.0
Cement	3.5	3.5
Sand and gravel mixture	4.0	5.0

*Source:* 2018 Resolution of the President No. 4086 (Annex 10); 2014 Resolution of the President No. 2270 (Annex 15).

*Note:* The State Enterprise NMMC pays tax on uranium mining in the manner and amount established by the Ministry of Finance.



### Charges for use of forest resources

The types of forest use distinguished in the 2018 edition of the Law on Forests comprise timber harvesting, collection of wild plants (medicinal plants, food plants, feed plants, aromatic plants, dye plants, fruit and nuts), hunting and fishing, cattle grazing, mowing and location of beehives and apiaries. Legal entities and individuals can make use of defined forest areas based on the granting of short-term (up to three years) or long-term (up to 10 years) permits and annual resource use quotas. The Cabinet of Ministers establishes the fee rates for use of biological resources; rates for flora and fauna species listed in the corresponding Red Books are, in general, much higher than rates for other biological resources. For domestic users (individuals and legal entities), rates are indexed to the official monthly minimum wage. Foreign users of forest resources are charged in terms of United States dollars; the corresponding charge rates, when expressed in national currency units, are much higher than those applied to domestic users.

The primary function of forests in Uzbekistan, besides preserving biodiversity and wildlife, is combating desertification and helping reduce other risks such as floods and soil erosion. This explains why commercial harvesting of timber is forbidden, with the exception of sanitation cuttings and thinning, on land of the state forest fund. Non-timber forest products (NTFPs) (such as walnuts, fruit, mushrooms, medicinal and food raw materials) are in high demand for commercial exploitation. Non-timber forest products and services also contribute significantly to livelihoods in rural areas. Annual revenue from the collection of raw materials of wild medicinal plants amounted to 580 million sum (some US\$72,000) in 2018. Annual income from the use of other non-timber products amounted to 133.9 million sum (US\$16,500) in the same year.

### *Tariffs for municipal waste collection and disposal*

Municipal waste management in Uzbekistan is most developed in the City of Tashkent, where the state-owned company SUE “Makhsustrans” has been operating waste collection services since 1990. In recent years, given the rapid growth in population, there has been increasing involvement of private companies in the provision of waste services in the capital, which are competing with SUE “Makhsustrans” for customers on the basis of service quality and price. Official waste tariffs are set by the Ministry of Finance in coordination with local governments. Private households in Tashkent pay a

monthly fee per registered person. The rate per person (since the beginning of February 2019) is 4,500 sum (US\$0.53), up by 15.4 per cent from the rate of 3,900 sum applied since 1 April 2018. Budget organizations and legal entities pay a charge of 54,000 sum (US\$6.50) per m<sup>3</sup> of waste collected. The total monthly waste charge for legal entities is calculated according to official waste accumulation norms. There is no separate tariff for waste disposal at the landfill or at dumpsites.

Tariffs are set at a level that has allowed for recovery of operating costs but left little, if any, funding for maintenance and modernization of equipment. Revenues were adversely affected by diminishing bill collection rates, reflecting the deteriorating quality of waste services and ineffective bill collection by waste companies. At the beginning of 2019, the Government reorganized the procedure for payment of waste fees. Waste services are no longer based on bilateral contracts between households and waste companies but, rather, on contracts concluded between local governments and waste companies. In the event, households pay waste fees directly to the local government, which, in turn, pays the waste companies. To ensure strict payment discipline by households, a Bureau of Compulsory Enforcement under the Prosecutor General’s Office has been assigned to recover debts for waste services as well as for other public utility services. Legal entities and individual entrepreneurs continue to have bilateral contracts with waste companies; however, they are obliged to prepay in full for monthly waste services provided or at least to prepay half of standard monthly waste bills.

### *Fee for plastic shopping bags*

Starting from 1 January 2019, it is prohibited for retail shops to hand out plastic bags to customers free of charge. Rather, plastic bags have to be sold at cost-reflective prices. At the same time, the domestic production and importation of polymer film packaging with a thickness of less than 40 microns has been forbidden. The exception is biodegradable polymeric material packaging without handles, which is an integral part of the packaging of goods, as well as being sold by the roll for household use. Plastic bags are made from a polymer substance known as polyethylene.

### *Extended producer responsibility schemes*

Uzbekistan does not yet operate extended producer responsibility schemes for products such as fuel oil, glass, paper, old vehicles, etc.



The current status of Uzbekistan vis-à-vis target 8.4 of the 2030 Agenda for Sustainable Development is described in box 3.1.

#### *Tariffs for water supply and sewerage services*

The Ministry of Finance is setting water supply and sewerage tariffs subject to approval by the Cabinet of Ministers. Tariffs distinguish three customer categories: households; budget organizations; and other water consumers, i.e. mainly the business sector. The dominant pattern is that tariffs for households are significantly lower than tariffs for the other two customer groups, which points to cross-subsidies flowing to the household sector. Average drinking water tariffs for private households in Uzbekistan amounted to 711 sum (US\$0.084) per m<sup>3</sup> in early 2019, compared with 1,299 sum (US\$0.15) for budget organizations and 1,484 sum (US\$0.18) for the business sector.

Tariffs differ significantly across the country. In early 2019, household drinking water tariffs ranged from 280 sum (US\$0.033) per m<sup>3</sup> in the City of Tashkent to 1,100 sum (US\$0.13) per m<sup>3</sup> in Namangan Oblast. This could reflect large differences in the costs of producing water at the various locations. In general, costs tend to be lower for large water systems such as in Tashkent, the largest city in Uzbekistan, which may help explain, at least partly, why water tariffs are quite low in the capital. Tariffs for all customer categories were increased significantly in recent years, designed mainly to offset the increasing electricity costs for water companies. Electricity costs account for a large share (some 30 per cent) of total water production costs, and there is considerable scope for improving the efficiency of operations of water companies by means of investments in energy-saving measures. In Tashkent, drinking water tariffs for households rose by 65 per cent and sewerage tariffs more than doubled between 2016 and 2018 (table 3.7).

### 3.1: Target 8.4 of the 2030 Agenda for Sustainable Development



**Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**

**Target 8.4: Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead**

As at early 2019, Uzbekistan does not produce the data needed to compile the Sustainable Development Goals indicators 8.4.1 (Material footprint, material footprint per capita, and material footprint per GDP) and 8.4.2 (Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP), although raw material extraction plays an important role in the domestic economy.

In the waste management sector, extended producer responsibility policy is not in place. The rationale of extended producer responsibility schemes is to create incentives for producers to prevent waste at the production stage, take environmental considerations into account at the product design stage and support recycling and materials management goals. The recently adopted 2019 Strategy on Municipal Solid Waste Management for the period 2019–2028 envisages the introduction of methods for collection and recycling of specific waste streams, such as mercury-containing waste, tyres, batteries, used oils and packaging waste, through the development of economic instruments for these purposes.

Ensuring the availability of data necessary to compile indicators 8.4.1 and 8.4.2 to measure progress towards the achievement of target 8.4 is an important task for Uzbekistan.

**Table 3.7: Household water tariffs in the City of Tashkent, sum/m<sup>3</sup>**

Effective date	Drinking		Total	Total (US\$/m <sup>3</sup> )
	water	Sewerage		
22/11/2018	280	235	515	0.061
01/05/2018	245	210	455	0.054
14/02/2018	195	165	360	0.043
21/07/2017	190	155	345	0.041
01/10/2016	180	115	295	0.035
01/04/2016	170	110	280	0.033

Source: SUE “Suvsoz” (<http://suvsoz.uz/abonentam/tariffs/>).

Notes: Drinking water tariffs excluding surcharge of 100 sum per m<sup>3</sup> levied since the beginning of 2018.

Exchange rate: US\$1 = 8,420 sum (9 April 2019).

Nevertheless, current water tariffs are not yet fully cost reflective; at best, they allow for recovery of operating costs. Many water utilities companies have accumulated severe debts, which also include unpaid electricity bills, exacerbating existing problems of unreliable supply and poor water service quality. Investments in the water sector infrastructure rely largely on funds allocated from the state budget and concessionary loans from foreign donors; however, in the absence of cost-reflective tariffs that would ensure the financial sustainability of water sector operations, these funds have been in short supply. The counterpart to this is a largely obsolete water sector infrastructure and a corresponding large pent-up demand for infrastructure investments to modernize and extend the water sector network.

The lack of financial sustainability of water companies reflects not only tariffs that are too low but also inefficiencies in bill collection. In Tashkent City, the bill collection rate of the local water company (SUE “Suvsoz”) was around 85 per cent in recent years. Low bill collection rates also reflect the inability or unwillingness of water companies to levy penalty payments or cut off consumers from water supply. Given the magnitude of this problem across the country, the Government introduced stringent measures designed to ensure adequate payment discipline. As of 1 January 2018, all customers of water supply and wastewater services are subject to 100 per cent prepayment of average monthly bills. Failure to make prepayments will lead to enforcement measures, which can extend to complete disconnection from water supply. Reconnection is subject to the payment of a fine.

Installation of water meters for gauging water consumption is obligatory for non-household consumers but not for residents. According to the Ministry of Housing and Communal Utilities, in Tashkent City, some 43 per cent of households had no meters installed in 2018. Households without meters pay for water services based on water consumption norms per person. The tariff per m<sup>3</sup> of drinking water, moreover, is 50 per cent higher than the standard tariff for metered consumption since 2013. Sewerage tariffs applied to households without water meters are the same as the standard tariff. In general, households without meters pay higher water bills than a comparable household with metered consumption. Moreover, normative billing entails consumers having to pay the same amount even when consumption declines due to interruptions in supply. The recent significant increase in water tariffs should also provide stronger incentives for households to install water meters. Metering of water consumption would not only increase the operational efficiency of water

companies but also lead to more rational use of water resources by consumers. The costs of water meter installation are, in principle, borne by the consumers. The Government has launched a programme to increase the proportion of households with water meters and is looking for financing sources for the purchase of water meters and related equipment to be installed during the period 2019–2021.

To mobilize domestic funds for investments in the water sector infrastructure, the Government decided in 2017, inter alia, to levy a surcharge on drinking water tariffs, which are allocated to a newly created Housing and Utilities Development Fund under the Ministry of Housing and Communal Utilities. The level of the surcharge is set by local governments. In Tashkent City, this levy had already been introduced in 2018, and it amounts to 100 sum (US\$0.012) per m<sup>3</sup>. Effective as of 2019, the surcharge of 100 sum per m<sup>3</sup> is also to be applied to the provision of sewerage services in the city. Outside Tashkent City, as of April 2019, this surcharge has been set at 50 sum per m<sup>3</sup> for both drinking water and sewerage services. The surcharge is paid by private households and budget organizations. Enterprises also pay a special surcharge.

While such a measure may provide some additional funds for financing investments in the water sector infrastructure, the key requirement is to achieve the financial sustainability of water companies by means of applying cost-reflective tariffs. This is also the basic condition for attracting private investors within the framework of public–private partnerships. The Government is aware of this and, in April 2019, adopted a new tariff methodology (“cost plus”) for the calculation and implementation of average tariffs, which should allow full cost recovery, including an allowance for capital depreciation (2019 Resolution of the Cabinet of Ministers No. 309). The application of these tariffs, which are subject to approval by the Ministry of Finance (the official price regulator), is envisaged as of 2020. At the same time, the Government is preparing a programme to introduce water meters for all water consumers.

### *Energy tariffs*

The Government owns and manages the energy sector. The sector operates under the supervision of the Cabinet of Ministers, which also regulates energy tariffs, which are computed by the Ministry of Finance. Tariffs for electricity and gas supply are set at a single countrywide rate for each of the customer categories. Tariffs for households are subsidized; legal entities pay rates that are much higher than those applied to households. The Government has, however,

aimed at maintaining average tariffs at a level that allows for recovery of operating and maintenance costs.

Tariff increases above the inflation rate helped to improve the financial performance of the power sector in recent years. Household electricity tariffs rose by some 60 per cent between 2015 and the end of 2018, compared with an average increase in the CPI of some 40 per cent. Nonetheless, energy prices are still below marginal long-term costs.

Against this background, the energy sector has been adversely affected by a lack of funds for modernization, rehabilitation and expansion of the supply infrastructure. There are large technical and commercial losses in the energy transmission and distribution systems. Electricity generation mainly relies on gas; given that the domestic gas price is significantly lower than international prices, this leads to high annual revenue losses. Another consequence is that such a policy is blunting domestic price signals that could create incentives for demand-side energy efficiency improvements. Effective as of the beginning of 2019, the Government introduced an “experiment” with a two-block electricity and gas tariff for households in the Yunusabad district of the City of Tashkent. Energy consumption in the second consumption block is subject to a 20 per cent higher tariff than energy consumption in the first block.

In April 2019, the Government adopted a new tariff methodology designed to create the basis for the gradual transition to full cost recovery tariffs by 2023 and established a regulatory body for tariff-setting, the Interdepartmental Tariff Commission under the Cabinet of Ministers (2019 Resolution of the Cabinet of Ministers No. 310). In this context, it is also planned to introduce provisions for targeted social assistance for low-income and vulnerable groups in the population and increase the installation of modern electricity meters. If implemented, these measures would help improve the financial sustainability of energy companies and would also enable stronger private sector participation in the energy sector.

In the face of deteriorating bill collection rates, the Government has also decided on measures to improve the payment discipline of energy consumers and aims to introduce a unified bill collection system for utility services. Since 1 July 2017, private households have to pay their monthly electricity and gas bill by the tenth day of the following month. Legal entities are

subject to full prepayment of their monthly energy consumption.

#### *District heating tariffs*

District heating (space heating and hot water supply) to urban settlements has traditionally been supplied by companies owned by municipalities. Most of these companies have been transferred to the Ministry of Housing and Communal Utilities, established in April 2017. The largest district heating system is operated in Tashkent City, which accounts for some 70 per cent of total heat production in the country. The district heating systems were put into operation some 30 to 50 years ago and are, by design and due to long-time underinvestment in maintenance, rehabilitation and modernization, technically largely obsolete. To a large extent, heating bills are based on consumption norms, due to a lack of metering in the corresponding buildings. Tariffs are set at levels that allow only for recovery of operating costs. Bill collection rates amounted to 87 per cent in Tashkent City in recent years. Given the poor state of the district heating infrastructure, the quality of heating services is low; gradual increases in tariffs to cost-reflective levels and new investments are needed to improve the performance of the sector.

#### *Support for renewable energy sources*

The Government launched efforts in 2015 to increase the use of renewable energy in Uzbekistan. In 2017, it also set renewable energy targets for new hydro, photovoltaic (PV) solar and onshore wind power for the period 2018–2021.

Traditional RES support schemes such as feed-in tariffs and competitive bidding/auctions have not been envisaged so far. There are, however, provisions for support in the form of investment tax credits and reduction in import taxes for RES technologies. Private ownership of renewable energy generation is legally authorized. A constraint on the use of RES is the abundance of traditional domestic energy sources and the prevailing fossil fuel subsidies.

In May 2018, the Government signed a power-purchasing agreement<sup>9</sup> with a Canadian-based company (SkyPower), which will invest US\$1.3 billion in the construction and operation of PV solar energy facilities across the country, with a total capacity of 1 GW. A power-purchasing agreement provides a set of incentives, which notably include

<sup>9</sup> This foreign direct investment is expected to create thousands of jobs; at the same time, it is an example of a PPP agreement.

exemption from customs duties, corporate income tax, VAT and land tax. There is also a sovereign guarantee that, if Uzbekenergo, the state-owned energy company, fails to purchase the power generated by the PV solar plants, the necessary funds shall be provided from the state budget. These guarantees may also be extended to other successful bidders for solar power projects so as to create a level playing field.

In August 2018, the International Finance Corporation (IFC) signed an agreement with the State Committee on Investments and Uzbekenergo to provide financial advisory services designed to attract private investors on a competitive basis for the design, financing, construction and operation of solar power facilities, with a total project value up to US\$1 billion, on a PPP basis.

### 3.2 Greening the subsidies system

#### *Tax reliefs*

The 1992 Law on Nature Protection provides for a range of instruments designed to provide incentives for economic entities to reduce adverse environmental impacts of their activities by offering tax benefits and preferential credits for investing in pollution abatement and resource-saving technologies. In a similar vein, the 2002 Law on Waste stipulates that companies that develop and produce equipment for waste disposal, waste reduction and waste recycling are eligible for financial benefits originating from the national environment fund, the state budget and other sources. Effective as of 2018, the state-owned waste companies engaged in municipal waste management (SUE “Makhsustrans” and SUE “Toza Hudud”) are exempt until 1 January 2023 from fees to be paid for the registration of purchased new special domestic vehicles, land tax and customs fees on imports of special equipment for municipal waste management that is not produced in the domestic market. There is no information on the actual use made of these schemes.

#### *Fossil fuel subsidies*

The Uzbek energy sector continues to be the source of large implicit (indirect) subsidies for the rest of the economy. The International Energy Agency has estimated that, in 2017, subsidies for fossil fuels that are consumed directly by end-users or used as input to electricity generation amounted to US\$5.24 billion, corresponding to 10.9 per cent of GDP. Gas accounted for 72.1 per cent of the total, electricity for 25 per cent and oil for 2.9 per cent. In 2010, fossil fuel subsidies

corresponded to a sizeable 30 per cent of GDP. However, this substantial decline in subsidies relative to GDP masks the fact that total subsidies in terms of national currency units increased by 48 per cent in 2017 compared with 2010. But this increase was more than offset by the strong growth in nominal GDP by a factor of 4 over this period, reflecting the combined effect of robust economic growth and high cumulative inflation.

Reducing fossil fuel subsidies continues to be an important challenge for the Government, which has embarked on a path of gradually increasing energy prices to cost-reflective levels.

Existing energy subsidies are not well targeted because they benefit rich households more than the poorest, given that the former consume larger volumes of energy. Moreover, low energy and fuel prices for domestic consumers have depressed the financial resources that the energy sector needs for the rehabilitation and expansion of the energy sector infrastructure. Low energy prices are also blunting incentives for investments in energy efficiency, which is potentially a large source for reducing energy consumption and related fossil fuel subsidies. Raising energy prices to cost-recovery levels would strengthen the financial position of the state-owned energy companies and promote more efficient resource allocation. Reducing fossil fuel subsidies would also allow redirection of the freed financial resources to measures designed to combat climate change and promote environmental protection.

The current stand of Uzbekistan vis-à-vis target 12.c of the 2030 Agenda for Sustainable Development is described in box 3.2.

#### *Subsidies to agriculture*

Agriculture, especially the production of cotton, is a major pillar of the Uzbek economy. The cotton sector is centrally regulated based on annual production targets and the setting of official procurement prices paid by the Government to farmers. The state procurement price for raw cotton has been significantly lower than world market prices, which has been tantamount to an implicit tax on farmers and has become an important source of Government revenue. The mirror image of this was a lack of incentives for farmers to achieve the set production targets. Against this background, the Government announced large increases in the guaranteed procurement price in 2017 and 2018.



### Box 3.2: Target 12.c of the 2030 Agenda for Sustainable Development



#### Goal 12: Ensure sustainable consumption and production patterns

**Target 12.c: Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities**

Uzbekistan nationalized the global target 12.c without changes. This target aims at the rationalization of fossil fuel subsidies that encourage wasteful consumption. The relevant indicator (12.c.1) is the amount of fossil fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels. There has been some progress 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), but, overall, this proportion is still very high in Uzbekistan. Information on the amount of fossil fuel subsidies as proportion of total national expenditure on fossil fuels is not available.

Measures to be implemented in order to achieve progress towards target 12.c on the rationalization of fossil fuel subsidies include:

- (a) Gradually removing fossil fuel subsidies for enterprises and the population by raising energy tariffs to cost-reflective levels and ensuring adequate targeted assistance for household consumers who are in a vulnerable position;
- (b) Removing existing subsidies for regulated prices of transport fuels.

The low procurement prices for raw cotton were, in the past, partly offset by a range of state subsidies provided to farmers, especially those involved in cotton production, for fertilizers, pesticides, petrol and diesel fuels for agricultural machinery and equipment, and irrigation. The subsidy for irrigation comprises the operation and maintenance costs of irrigation systems, including the electricity costs of irrigation pumping stations. Irrigation subsidies associated with the cotton policy led to farmers' deteriorating interest in investing in more efficient irrigation techniques. A large part of the subsidies is provided by state-managed banks in the form of targeted loans at preferential interest rates, which are significantly lower than market rates. The actual value of these subsidies is difficult to calculate but may have amounted to US\$525 million in 2016.<sup>10</sup> In March 2018, the Government announced measures designed to reduce input subsidies for mineral fertilizers and fuels to cotton producers.

In December 2018, the Government announced measures for subsidizing the installation of water-saving technologies (drip irrigation) by farmers producing raw cotton. State support amounts to 8 million sum (US\$960) per ha of sown area of raw cotton. In addition, the Government will partly reimburse interest payments on loans from commercial banks taken up by farmers for financing the installation of drip irrigation technologies. The

total funds allocated for 2019 for the reimbursement of farmers' costs for the introduction of drip irrigation technologies amounts to 120 billion sum (some US\$14.5 million). Moreover, imports of components of drip irrigation technology by cotton farmers and manufacturers of drip irrigation technology are exempt from excise duties until 1 January 2021.

### 3.3 Investing in environmental protection and green economy

#### *Implementation costs for environment-related strategies, programmes and plans*

In 2013, the Government launched a five-year Programme of Actions on Environmental Protection for the period 2013–2017 (2013 Resolution of the Cabinet of Ministers No. 142). The general objective was to improve environmental conditions in the country based on a wide range of measures, including investments in pollution abatement in industry, improvements to municipal infrastructure, enhancement of environmental monitoring, development and extension of the PA network, development of environmental legislation, environmental education and the promotion of international cooperation with a focus on transboundary pollution issues. The Programme was designed as the main instrument for public policy planning in the environmental field within the

<sup>10</sup> Nodir Djanibekov and Marten Petrick, "Recent changes in Uzbekistan's cotton procurement: Implications and reform agenda ahead", paper prepared for the American Economic Association conference, 2019, December 2018.

framework of economic reforms in Uzbekistan. However, a comprehensive review of its achievements and problems encountered is lacking. A summary implementation report presented to Oliy Majlis by SCEEP in July 2018 indicated that total funds spent amounted to 303.4 billion sum (US\$37.5 million at average 2018 exchange rates); in addition, funds denominated in foreign currency units of US\$809 million and €0.14 million were disbursed. There has been no other environmental action programme launched since then.

Investments in environmental protection and green economy are, however, an integral part of the 2017 Action Strategy on Five Priority Directions for Development for the period 2017–2021, which identifies the major priority directions of reforms, which include, among others, economic and social development and liberalization, as well as governance and public administration reform. The Strategy also defines targeted programmes for modernization of the major economic sectors, which also include improvements in the areas of public utility services (water supply and sewerage, municipal waste management, energy supply, public transport) and expanding the use of RES. Overall, the Government has planned investment projects in the various economic sectors worth US\$40 billion during the period 2017–2021.

The wide range of government policies, programmes and projects to further develop the basic physical structures and facilities (buildings, roads, energy supply, etc.) of the country, moreover, brings into focus the importance of a comprehensive assessment of related impacts on ecosystems and associated ecosystem services, notably the changes in the economic value of ecosystem services compared to the environmental baseline (no change). These policy appraisals should typically take place in the context of cost-benefit analysis. Economic valuation of ecosystem services is still in its infancy in Uzbekistan, but is strongly advocated for in the 2019 Sixth National Report to the Convention on Biological Diversity (CBD).

Besides domestic financing sources, it will be necessary to attract foreign investment and the associated transfer of advanced technologies to attain the development targets. Therefore, the Government has also planned to open additional free economic zones in the Samarkand, Bukhara, Fergana and Khorezm Oblasts. The Ministry of Investments and External Trade was established in 2019 with the remit to coordinate the design and implementation of a unified state investment policy and attract foreign

investment. More generally, these investment programmes would also support progress towards the implementation of the Sustainable Development Goals, given that they focus on the accumulation of human capital (education, health) and real capital (public infrastructure) and the importance for Uzbekistan of creating jobs for a large proportion of the working-age population during its current demographic transition.

#### *Green public procurement*

The 2018 Law on Public Procurement defines the general requirements for the process of public procurement, including procedures for competitive bidding for all types of goods (works, services) that meet the established criteria. Before the adoption of this Law, public procurement was regulated by more than 30 regulatory acts, which adversely affected the integrity, transparency and openness of the procurement system and made it vulnerable to corruption. The Law establishes comprehensive procurement principles and stipulates that the implementation of public procurement must take into account “the priorities of socioeconomic policy, including the creation of high-tech and innovative industries and the preservation of a favourable environmental situation”. While the Law creates the foundations for modernizing and improving the public procurement system, its effectiveness depends, to a large extent, on investments in capacity-building and upgrading the professionalism of officials involved in procurement and contract management. This would also help in promoting the implementation of sustainable public procurement policies in line with target 12.7 of the 2030 Agenda for Sustainable Development (box 3.3).

#### *Public sector environmental protection expenditures*

The state budget system of Uzbekistan comprises the state budget (central government and regional/local budgets), budgets of state trust funds for special purposes (such as the Republican Road Fund) and budget of the Fund for Reconstruction and Development, a kind of sovereign wealth fund. Combined, these budgets constitute the so-called consolidated state budget. Besides the state budget, there is a system of extra-budgetary funds of budget organizations, such as ministries and state committees, which are financed by special non-tax charges, administrative fines and financial sanctions. Part of this system of extra-budgetary funds is the environmental fund of Uzbekistan.



### Box 3.3: Target 12.7 of the 2030 Agenda for Sustainable Development

#### Goal 12: Ensure sustainable consumption and production patterns

#### Target 12.7: Promote public procurement practices that are sustainable, in accordance with national policies and priorities

Public procurement accounts for about one third of the consolidated state budget expenditures (or about 10 per cent of GDP) in Uzbekistan. Target 12.7, as nationalized by Uzbekistan, calls for the “enhanced use of environmental standards in procurement practices”. The 2018 Law on Public Procurement provides the legal foundation for raising public procurement policies and practices to levels corresponding to international standards being met by more advanced economies.

Whereas the Law is a clear step forward, 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.

The 2019 ECE Recommendation No. 43 on Sustainable Procurement (Minimal common sustainability criteria for sustainable procurement processes to select micro-, small and medium-sized enterprise suppliers) provides modern guidance to governments in designing sustainable public sector procurement policies and regulation.

#### Consolidated state budget

Expenditures on environmental protection funded from the general government budget (consolidated state budget) are mainly designed to finance the operating costs of the competent government authorities and miscellaneous activities related, inter alia, to the maintenance cost of PAs and financial support for the rehabilitation and extension of the municipal waste sector and water sector infrastructure. The major source of these financial resources has been the central government budget, with a conspicuous exception in 2017, when there was a surge in local government environmental expenditures.

Overall, environmental protection expenditures accounted only for a small share in total general government expenditures during the period 2012–2019, with a peak of 0.15 per cent in 2017. The proportion of environmental expenditures relative to GDP was, accordingly, even smaller, at some 0.02 per cent (table 3.8). However, the consolidated state budget does not include a number of off-budget funds operated by ministries, state committees and other governmental bodies, among which is the environmental fund.

#### Environmental fund

From 2009 until mid-2017, Uzbekistan operated a system of extra-budgetary environmental funds that comprised the Republican Fund for Nature Protection and 14 regional funds. All these funds were under the former State Committee for Nature Protection and its territorial representatives at the local level. The Republican Fund played a more residual role in this scheme, because its main funding source was a 25 per cent share in revenues accruing to the system of local

funds. This system required extensive coordination about local priorities, which had to be agreed with the former State Committee and rendered cumbersome the pursuit of national priorities, given the limited financial endowments of the Republican Fund. In order to improve the efficiency and effectiveness of the use of scarce resources, the authorities decided to merge the Republican Fund and the 14 regional funds into a new fund: the Fund for Ecology, Environmental Protection and Waste Management (hereafter, the Fund) in October 2017. The Fund is located within SCEEP.

The Fund is managed by a council, which is headed by the Chairperson of SCEEP. Further members are other representatives of SCEEP and other state bodies, and research and non-governmental, non-profit organizations working in the field of ecology and environmental protection. The annual work programme agreed by the council is submitted to the Cabinet of Ministers for final approval. Reviews and selection of proposed projects are based on a special internal regulation on the procedure for the selection of executors for the implementation of projects and activities. The operations of the Fund are administrated by the Unit for Operation of the Fund within SCEEP (figure 1.2), which is also in charge of organizing public tenders for the implementation of projects. SCEEP has to report on a quarterly basis on its financial transactions to the Ministry of Finance, which is in charge of state control over the effective use of the resources of the Fund. A project implementation report has to be submitted to the Cabinet of Ministers on a half-yearly basis.

The sources of revenue of the Fund are the payments of pollution charges, fines for violation of environmental standards and environmental damage

caused, and permit fees for the felling of trees outside the state forest fund. The proportion of revenue from pollution charges allocated to the Fund was raised to 74 per cent as from the beginning of 2018, compared with 40 per cent in 2009. Effective as of 1 December 2018, the 74 per cent share of revenues from payments for excessive discharge of pollutants into municipal sewerage networks of cities and towns is allocated to the Fund for Development of Water Supply and Sanitation Systems under the Ministry of Housing and Communal Utilities. The other revenue sources are a proportion of the fines for violations of environmental regulations (74 per cent) and payments for environmental damage caused and excessive use of natural resources (40 per cent), and 74 per cent of fees for issuing permits for felling trees outside the state forest fund. The remaining share of all these revenues is allocated to the state budget. Total annual revenue of the Fund amounted to 22.4 billion sum (US\$2.8 million) in 2018. On average, pollution charges accounted for 62 per cent of total revenue during the

period 2014–2018; the share of permit fees for the felling of trees outside the state forest fund was 27.75 per cent (table 3.9).

Expenditures of the Fund are based on the execution of an annual programme, which has to be approved by the Cabinet of Ministers. The three major categories, which accounted for an aggregate share of 83.4 per cent of total expenditures during the period 2014–2018, were: (i) the co-financing of projects (49.3 per cent); (ii) financing of construction of environmental facilities, purchase of equipment and maintenance (18.7 per cent); and (iii) territorial development of environmental protection (15.4 per cent). Annual expenditures peaked at 7.58 billion sum in 2018, reflecting a sharp rise in co-financing of projects, while there was a decline in expenditures for most of the other spending categories. In 2018, co-financing of projects accounted for 82.3 per cent of all expenditures of the Fund (table 3.10).

**Table 3.8: General government expenditures on environmental protection, 2012–2019, billion sum**

Unit of general government	2012	2013	2014	2015	2016	2017	2018	2019
Budgetary central government	10.41	14.35	18.80	21.15	22.79	31.29	..	..
Local government	2.24	7.55	7.25	6.10	6.03	72.12	..	..
Total general government expenditure on environmental protection	12.65	21.90	26.05	27.25	28.82	103.40	47.08	65.67
Total general government expenditure	29 768.96	36 761.40	43 805.40	51 086.30	57 169.80	68 904.10	103 006.80	125 778.00
Expenditure on environmental protection (% of total government expenditure)	0.04	0.06	0.06	0.05	0.05	0.15	0.05	0.05
Expenditure on environmental protection (% of GDP)	0.01	0.02	0.02	0.02	0.01	0.04	0.01	0.02
Total government expenditures as % of GDP	30.40	30.42	30.04	29.73	28.59	27.12	30.94	29.55

Source: IMF, Government Finance Statistics (<http://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405>); IMF, World Economic Outlook database, April 2019 ([www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx](http://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx)); State Committee on Ecology and Environmental Protection, direct communication.

Notes: General government expenditures by function (COFOG).

Local government comprises the Republic of Karakalpakstan, 12 oblasts and the City of Tashkent.

Data for 2018 are preliminary; data for 2019 are planned expenditures.

**Table 3.9: Revenues of the environmental fund, 2014–2018, billion sum**

	Billion sum					Average	US\$ million
	2014	2015	2016	2017	2018	2014–2018 (%)	
Pollution charges	5.97	9.20	10.15	15.60	15.86	61.82	1.964
Fines and lawsuits	1.45	1.92	1.99	1.89	2.34	10.43	0.290
Permit fees for felling of trees	5.51	4.76	7.28	3.72	4.22	27.75	0.523
<b>Total</b>	<b>12.93</b>	<b>15.88</b>	<b>19.41</b>	<b>21.21</b>	<b>22.41</b>	<b>100.00</b>	<b>2.777</b>

Source: State Committee on Ecology and Environmental Protection, 2019.

Notes: Exchange rate: US\$1 = 8,072 sum (average rate for 2018).



**Table 3.10: Expenditures of the environmental fund, 2014–2018**

	2014	2015	2016	2017	2018
<b>Total (billion sum)</b>	<b>1.96</b>	<b>1.84</b>	<b>1.52</b>	<b>2.78</b>	<b>7.58</b>
<b>Total (US\$ million)</b>	<b>0.85</b>	<b>0.71</b>	<b>0.51</b>	<b>0.53</b>	<b>0.94</b>
of which: (%)					
Co-financing of projects	25.19	47.41	73.66	17.97	82.31
Territorial development of environmental protection	23.51	32.63	18.20	2.41	0.00
Construction and maintenance of environmental facilities	30.44	7.28	1.52	49.96	4.15
Environmental education	6.49	2.23	3.06	2.88	0.00
Research and development work	6.00	2.68	0.65	19.86	4.55
Other	8.36	7.76	2.90	6.92	9.00

Source: State Committee on Ecology and Environmental Protection, 2019.

Note: Figures in United States dollars were calculated using the corresponding average annual exchange rate.

#### Fund for Development of Water Supply and Sanitation Systems

A Clean Water Fund was established in 2017 with the main rationale of providing a guaranteed source of financing for investments in the construction and rehabilitation of the domestic water supply infrastructure within the framework of the Programme for Comprehensive Development and Modernization of the Drinking Water Supply and Sewerage Systems for the period 2017–2021 administered by the Ministry of Housing and Communal Utilities. In November 2018, the Clean Water Fund was transformed into the Fund for Development of Water Supply and Sanitation Systems, with the additional task of financing investment projects for the construction and rehabilitation of sewerage networks and facilities. The initial capital endowment of the Fund amounts to US\$248.1 million in 2019, which includes US\$131.8 million allocated from the state budget and US\$95.6 million from international financial institutions (IFIs) and foreign countries. Other sources of the Fund are the revenues collected from the surcharges on drinking water and sewerage tariffs introduced in 2018.

#### Forestry Development Fund

The Forestry Development Fund was established in 2016, when it was under the Forestry Department of the Ministry of Agriculture and Water Management. The Fund was transferred to the State Committee on Forestry at the time of its creation in July 2017. The main purpose of the Fund is to provide financial support for programmes designed to promote the development of forestry, as well as nature reserves and other PAs on the lands of the forest fund. Whereas the State Committee on Forestry is financed from the state budget, its regional forestry departments have to be

financed from the own resources of the Fund. The financing sources for the Fund are: fees collected for processing and issuing permits for collecting plant species, except those that are listed in the Red Book; fines for damage inflicted on flora and fauna; 50 per cent of fees for various types of forest use, such as livestock grazing, collection of firewood (without felling trees) and cutting trees and shrubs in permitted locations; and soft loans and grants from international donors. In 2018, the Fund had total revenues of 45.05 billion sum (US\$5.6 million), of which 39.64 billion sum (US\$4.9 million) were actually spent.<sup>11</sup> The balance was carried over to 2019. The purchase of tree seedlings accounted for 68 per cent of total expenditures.

#### Republican Road Fund

The Republican Road Fund (RRF), which was established in 2003, is the central state body for financing the construction, repair and maintenance of public roads. The revenues of the RRF stem from a special mandatory levy paid by legal entities, vehicle registration fees and transit fees for foreign vehicles. According to the 2015 World Bank assessment “Uzbekistan – Regional Roads Development Project”, total revenue of the RRF has been broadly sufficient to ensure adequate maintenance of all roads, meaning that the financing of construction of new roads has to rely on state budget resources and international loans. Total revenue of the RRF amounted to 4.2 billion sum (US\$527 million), corresponding to 1.2 per cent of GDP in 2018.

The Government has been reviewing the potential of PPPs and the introduction of road user charges to improve maintenance and further develop the road network.

<sup>11</sup> Figures in United States dollars were calculated using the average annual exchange rate for 2018 (US\$1 = 8,069.6 sum).

### *Environmental protection expenditures in the enterprise sector*

Uzbekistan has an extensive annual reporting system on current environmental protection expenditures in the enterprise sector. These expenditures comprise, in principle, intermediate consumption (purchases of energy, materials), compensation of employees for environmental protection activities and purchases of environmental protection services from specialized producers. Some 1,300 large enterprises and 3,000 micro- and small enterprises currently respond to the questionnaires of the State Committee on Statistics. Total current expenditures on environmental protection amounted to 470.4 billion sum in 2017, corresponding to 0.2 per cent of GDP; some 98 per cent of this is accounted for by large enterprises (table 3.11). The indicator used for measuring the size of enterprises is the number of employees. In Uzbekistan, however, this indicator differs among the various sectors of the economy. There is, moreover, no statistical category of “medium-sized” enterprises in Uzbekistan. Environmental expenditures of large enterprises are available by environmental domain; in 2016–2017, 57.34 per cent was spent on water protection (table 3.12).

### *Foreign direct investment*

The authorities have stepped up efforts to attract foreign direct investment (FDI), which has been volatile in recent years. The cumulative inflow of FDI

is still among the lowest among the countries of the Commonwealth of Independent States. Only 1.8 per cent of registered companies (some 5,500) have participation of foreign capital; most of them operate in production industries. The Government has used free economic zones, which provide tax and customs incentives to attract foreign investors with a focus on modern high-tech and localizing production, such as deep domestic processing of mineral resources and production of competitive products with high value added.

The 2017 Decree of the President No. 4933 was issued to simplify procedures and speed up the process of sale of state property and to eliminate administrative barriers to privatization. The overall improvement in the business climate since the launch of economic reforms is reflected in the upward movement of Uzbekistan in the World Bank’s Ease of Doing Business rating to rank 76 (out of 190 countries) in 2018 from rank 166 in 2011. Well-designed government policies can help catalyse FDI in directions that contribute to promoting environmentally sustainable growth and development. One example of this was the recent agreement with a Canadian-based company to invest in renewable energy production in Uzbekistan. However, such policy for greening FDI to address environmental challenges in the country is still at an early stage. There is great potential for the Government to create conducive conditions for the private sector that help overcome barriers that are impeding green FDI.

**Table 3.11: Current environmental protection expenditures in the business sector, 2012–2017, billion sum**

	2012	2013	2014	2015	2016	2017
Large enterprises	415.0	334.1	333.7	363.3	363.6	462.8
Micro- and small enterprises	8.5	2.9	3.0	4.1	4.2	7.6
<b>Total</b>	<b>423.4</b>	<b>337.0</b>	<b>336.7</b>	<b>367.4</b>	<b>367.8</b>	<b>470.4</b>
<b>Total (as % of GDP)</b>	<b>0.43</b>	<b>0.28</b>	<b>0.23</b>	<b>0.21</b>	<b>0.18</b>	<b>0.19</b>

*Source:* State Committee on Statistics, Main indicators of nature conservation, rational use of natural resources, forestry and hunting in 2017; and previous editions.

**Table 3.12: Current environmental protection expenditures in the business sector by environmental domain, 2012–2017, billion sum**

	2012	2013	2014	2015	2016	2017
<b>Total</b>	<b>415.0</b>	<b>334.1</b>	<b>333.7</b>	<b>363.3</b>	<b>363.6</b>	<b>462.8</b>
of which (as %):						
Water	62.3	44.5	44.3	48.2	57.0	57.3
Air	25.0	35.8	33.9	28.6	20.4	16.6
Land	11.4	17.9	20.7	22.0	21.2	25.2
Biological resources	1.3	1.8	1.1	1.2	1.4	0.9

*Source:* State Committee on Statistics, Main indicators of nature conservation, rational use of natural resources, forestry and hunting in 2017; and previous editions.

*Note:* The category “land” includes expenditures for collection, transport and disposal of waste.

China is among Uzbekistan's main trading partners and a significant source of FDI inflows. The total stock of FDI from Chinese companies amounted to some US\$500 million at the end of 2018. Uzbekistan is among the 65 countries covered by China's Belt and Road Initiative (BRI) (box 3.4), which consists primarily of the Silk Road Economic Belt, linking China to Central and South Asia and onwards to Europe. These are mainly transport (road or rail) infrastructure projects that are largely financed – based on loans – by China but may also involve newly created multilateral financial institutions, namely, the Asian Infrastructure Investment Bank (AIIB) and the Silk Road Fund. These projects, which are slated to be mainly executed by Chinese state-owned companies, do not, however, fall under the category of FDI. (FDI is defined as net inflows of investment to acquire a lasting management interest in an enterprise operating in an economy other than that of the investor.) These infrastructure projects will, however, help improve the transportation networks in Uzbekistan, which, in turn may stimulate inflows of FDI and promote economic growth based on a broader and deeper integration of the national economy into global value-added chains.

A first project implemented in Uzbekistan under the BRI – the construction of the 19.2 km Kamchiq railway tunnel – was started in 2013 and completed in 2016. There is poor information on other BRI projects in Uzbekistan. Some projects are branded as BRI but overall there is no official attribution of specific projects to BRI. In any case, the large scale of these infrastructure projects has led to widespread concerns about their environmental risks. How these risks are avoided or mitigated is largely determined by environmental policies in the host countries of these projects, but this depends also on the capabilities and political will of host countries to enforce such policies. Large infrastructure projects call for EIA and, notably, early-stage SEA before the projects have already moved to an advanced planning stage. There is also a role for the multilateral development banks that are providing co-financing, to impose conditions that are more stringent than those of individual host countries and thereby help “green” these projects. In this context, standards developed by the IFC and World Bank are often used as benchmarks for good international industry practice (GIIP) for multilateral, bilateral and commercial loans.<sup>12</sup>

#### Box 3.4: Uzbekistan and the Belt and Road Initiative

There is no published official register of Chinese investments in BRI projects in Central Asian countries. A recent study by the Central Asia Data-Gathering and Analysis Team (CADGAT), based on an assessment of diverse information sources, puts the number of implemented/ongoing BRI-related projects in the five Central Asian countries from the time of the announcement of the BRI in 2013 until the end of 2018 at 261. Of these, 237 projects (91 per cent) were financed on a bilateral basis; the others were multilateral projects. The total BRI-related investments in the five Central Asian countries over this period amounted to US\$136.25 billion. The large bulk of investments were made in Kazakhstan (US\$90.86 billion, or 66.7 per cent) and Turkmenistan (US\$24.84 billion, or 18.2 per cent). The total number of projects implemented in Uzbekistan is 43, of which 38 were on a bilateral basis. The total investment volume in Uzbekistan amounted to US\$4.64 billion, corresponding to 3.4 per cent of the total investments for Central Asia.

Only two of these 43 projects, however, are branded (i.e. publicly reported) as BRI projects, namely (i) the construction of the electrified Andren-Pap railroad with electrification of the Pao-Kokand-Andijan section (124.14 km) (jointly supported by the Fund for Reconstruction and Development of Uzbekistan, the World Bank and the Exim Bank of China) and (ii) the modernization of the coal mining enterprises of JSC Shargunkumir (supported by the Chinese Development Bank and the Exim Bank of China).

Chinese investments in Uzbekistan (including multilateral projects) have strongly focused on mineral and petroleum exploration and processing (US\$2.21 billion or 47.7 per cent of the total) and rail and road connectivity projects (US\$1.27 billion, or 27.4 per cent). Investments in industry projects amounted to US\$0.92 billion (19.9 per cent). Energy connectivity projects accounted for 4.4 per cent, and agriculture and food accounted for only 0.6 per cent.

*Source:* Vakulchuk, R. and others (2019). BRI in Central Asia: Overview of Chinese Projects. 10.13140/RG.2.2.13032.52488/1. Available at

[www.researchgate.net/publication/333673045\\_BRI\\_in\\_Central\\_Asia\\_Overview\\_of\\_Chinese\\_Projects](http://www.researchgate.net/publication/333673045_BRI_in_Central_Asia_Overview_of_Chinese_Projects)

*Note:* CADGAT was established by the Norwegian Institute of International Affairs (NUPI) and the OSCE Academy in 2009. The purpose of CADGAT is to produce new cross-regional data on Central Asia that are publicly available.

<sup>12</sup> Elizabeth Claire Losos and others. “Reducing environmental risks from Belt and Road Initiative investments in transportation infrastructure”, Policy Research Working Paper, No. WPS 8718 (Washington, D.C., World Bank Group, 2019).

### *Development assistance*

Uzbekistan has been receiving official financial assistance on a bilateral and multilateral basis, which has consisted mainly of loans made on concessional terms and grants (official development assistance (ODA)), with the main general objective to promote economic development and social welfare. Major bilateral donors in recent years were Germany, Japan, Korea, the Netherlands, Sweden, Switzerland and the United States. Multilateral donors active in Uzbekistan include the Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), European Union (EU) institutions, International Bank for Reconstruction and Development (IBRD), International Development Association (IDA) and IFC. Total disbursements of ODA (net of repayments of principal) amounted to US\$638.3 million in 2017, up from US\$457.3 million in the preceding year. Development assistance has focused mainly on financing of investment projects in agriculture, energy, transport and communications, water supply and sanitation and water resources management. Disbursements of ODA for infrastructure projects amounted to US\$401.5 million (63 per cent of total net ODA) in 2017.<sup>13</sup>

### **3.4 Eco-innovations**

Eco-innovations are a special class of innovations, which relate mainly to environment-related research and development (R&D) and technologies. The defining feature of eco-innovations is that, throughout their life cycle, they reduce environment pollution and increase the efficiency of resource use compared with relevant alternatives. Both innovation in general and eco-innovation are critical for achieving sustainable development. This pertains, notably, to target 8.4 of the 2030 Agenda for Sustainable Development, which calls for improving resource efficiency in consumption and production and decoupling economic growth from environmental degradation.

There is no systematic collection of information on eco-innovation activity in Uzbekistan. Examples of eco-innovation in the country are: the (planned) installation of wind and solar power plants; measures to improve the energy efficiency of buildings; the domestic production and installation of energy-saving lamps; the introduction of drip irrigation technologies in agriculture; and the organizational improvements in

solid waste management at the local level. It may be surmised, however, that there is great scope for further implementation of eco-innovations in all major sectors of the economy.

Uzbekistan has placed innovation at the heart of its economic development strategy, recognizing that, in the long run, innovation is the main driver of increases in economic well-being. The past economic model has led to inadequate integration into global supply chains, low technology transfer and weak innovative activities, which are reflected in the low productivity and weak international competitiveness of most domestic firms. The national innovation system, i.e. the network of public and private institutions that are funding and performing R&D activities and are using the results of R&D for the commercial exploitation of processes and products, is underdeveloped (chapter 4). Existing obstacles for innovative development are a number of systemic problems as well as lack of capacities and potential. The Global Innovation Index (GII) 2015 ranked Uzbekistan 122nd of 141 countries.<sup>14</sup> Uzbekistan was not ranked at all in the GII in 2016–2018. Domestic R&D expenditure corresponded to only 0.2 per cent GDP in 2017 compared with a global average of 1.7 per cent (World Bank) (box 4.2).

The Government has adopted in recent years a number of policy documents and measures designed to promote innovative activities. A Ministry of Innovation Development was established at the end of 2017, which is responsible for the design and implementation of domestic innovation policy. At the same time, a new fund to support innovative activities was created. The Government has also adopted the Strategy for Innovative Development for the period 2019–2021 (2018 Decree of the President No. 5544), which has as its main objectives improving the quality and coverage of education at all levels, strengthening the scientific potential and effectiveness of R&D and increasing public and private sector investment funds for innovative activities. Of critical importance will be to strengthen the absorptive capacity of domestic firms, i.e. the ability to identify, assimilate, transform and use external knowledge, research and practice.

### **3.5 Green jobs**

A green job is broadly defined as any decent job that contributes to preserving or restoring the quality of the

<sup>13</sup> Asian Development Bank, “Basic statistics 2019”. Available at [www.adb.org/publications/basic-statistics-2019](http://www.adb.org/publications/basic-statistics-2019).

<sup>14</sup> Soumitra Dutta, Bruno Lanvin and Sacha Wunsch-Vincent, eds., *The Global Innovation Index 2015: Effective Innovation Policies for Development* (Ithaca, New York, Cornell University; Fontainebleau, INSEAD; Geneva, World Intellectual Property Organization, 2015).



environment, whether it is in agriculture, industry, services or administration.<sup>15</sup> When measuring the number of green jobs, statistical agencies, such as Eurostat, usually focus on jobs in the environmental goods and services sector, which comprises mainly wastewater and waste management, production of renewable energy and energy-saving measures. Green jobs also encompass workers who are involved in making the production processes of their companies more environmentally friendly (e.g. air pollution abatement) or having them use fewer natural resources. Data on the number of green jobs and the related environmental/economic sectors are not available for Uzbekistan.

There is high unemployment in Uzbekistan, and there is a very large informal sector, which is estimated at some 60 per cent of total employment in 2018, according to the Ministry of Employment and Labour Relations. Creation of green jobs is mentioned among key principles of the Strategy for Transition to Green Economy for the period 2019–2030. The expansion of the green economy and the shaping of required skills for green jobs should help in promoting higher levels of employment and decent work in line with Sustainable Development Goal 8 and target 8.3.

### **3.6 Public–private partnerships in support of the green economy**

A properly designed and implemented PPP can be a source of additional private sector funding as well as technical and management expertise in areas such as the provision of public utility services (e.g. water supply and sanitation) and financing of public infrastructure such as roads.

Uzbekistan lacks experience with the use of PPPs and has still to build an efficient and transparent legal and institutional framework for the implementation of PPPs in line with internationally acknowledged standards. The Law on Public–Private Partnerships was adopted recently – in May 2019. The EBRD is providing technical assistance to support the design and development of an investor-friendly PPP regime in the country. As a first step to creating the required institutional capacities for coordination and management of PPPs, the Agency for the Development of Public–Private Partnerships was established under the Ministry of Finance in October 2018. The 2018 Resolution of the President No. 4040 calls for an increased role for PPPs in the modernization and management of the water supply and sewerage sector.

To date, private sector cooperation with the public sector has been mainly limited to long-term production-sharing agreements in the automobile and minerals sectors and the establishment of free economic zones for attracting FDI. In 2018, the IFC signed a mandate with the Government to help increase the country’s renewable power capacity and encourage private sector investment in Uzbekistan’s renewable energy sector. The project involves the establishment of a PPP between the state-owned national power utility (Uzbekenergo) and a private sector company, designed to mobilize know-how and capital for the construction and operation of a 100 MW solar plant. This is planned to be the first phase of a larger initiative to generate up to 1 GW of solar energy.

### **3.7 Legal, policy and institutional framework**

#### *Legal framework*

#### Pollution charges

Pollution charges are levied in accordance with the Laws on Nature Protection, on Ambient Air Quality and on Waste. Charge rates, payments modalities and other details are regulated by the 2018 Resolution of the Cabinet of Ministers No. 820 “On measures to further improve the economic mechanisms for the protection of nature”, which entered into force on 1 January 2019. Until the end of 2018, pollution charges were regulated by the 2003 Resolution of the Cabinet of Ministers No. 199 (no longer in force).

#### Taxes

Taxes on land, property (real estate), water use and subsoil resources, and excises on motor vehicles and energy products such as motor fuels are regulated by the 2007 Tax Code. Effective tax rates are determined in resolutions of the President. Rates for 2019 were set in the 2018 Resolution of the President No. 4086 “On the forecast of the main macroeconomic indicators and parameters of the state budget of the Republic of Uzbekistan for 2019 and budget guidelines for 2020–2021”.

The rates of customs duties on imports and excise tax rates were set in the 2017 Resolution of the President No. 3303 (no longer in force) and 2018 Resolution of the President No. 3818. Excise tax on domestic production of passenger motorcars is established in the 2017 Resolution of the President No. 3454 and 2018 Resolution of the President No. 4086.

<sup>15</sup> International Labour Organization; United Nations Environment Programme.

### Administrative price controls

Prices of motor fuels and other energy resources (electricity, gas, heating) are set by the Cabinet of Ministers, (e.g. 2018 Resolution of the Cabinet of Ministers No. 897 “On the gradual change of prices and tariffs for fuel and energy resources”).

### Use of forest resources

The use of forest resources is based on the Law on Forests, Law on Protection and Use of Flora and Law on Protection and Use of Fauna. The 2014 Resolution of the Cabinet of Ministers No. 290 “On the settlement of the use of biological resources and on the procedure for passing licensing procedures in the field of environmental management” determines, inter alia, the fee rates for use of flora and fauna species, the distribution of payments made to various state agencies, and the procedures and fees for export and importation of wild flora and fauna.

### Tariffs for utility services

Tariffs for municipal waste management, water supply and sewerage services, energy and heat supply are set by the Ministry of Finance in coordination with the Government. The methodology for tariff-setting is based on the 2010 Resolution of the Cabinet of Ministers No. 239. The reorganization of the payment procedures for utility bills since 2018 is regulated by various decrees of the President, such as the 2018 Decree of the President No. 5580 “On measures for fundamental improvement of the system of payments for the collection and removal of municipal solid waste” and 2018 Resolution of the President No. 3981 “On measures to accelerate the development and ensure the financial sustainability of the electricity industry”. A new tariff methodology and measures for electricity tariff reform were launched by the 2019 Resolution of the Cabinet of Ministers No. 310 “On measures to further improve the tariffs policy in the electrical industry”. In a similar vein, a new tariff methodology for the application of cost-reflective tariffs for water supply and sewerage services was adopted in 2019 Resolution of the Cabinet of Ministers No. 309 “On measures to improve the development, approval and setting of regulated prices (tariffs) for water supply and sewerage”.

### Support for renewable energy sources

The legal framework for renewable energy development was established with the 2015 Resolution of the President No. 2343 “On the Programme of Measures to Reduce Energy Intensity and Introduce Energy Efficient Technologies in

Economic Sectors and the Social Sector for the period 2015–2019”. The 2017 Resolution of the President No. 3012 “On the Programme of Measures for Further Development of Renewable Energy and Energy Efficiency in Economic Sectors and the Social Sector in the period 2017–2021” sets renewable energy targets for new hydro, solar PV and onshore wind power for the period 2018–2025. The involvement of PPPs in this area was launched with the 2018 Resolution of the President No. 3687 “On additional measures for the implementation of investment projects in the field of renewable energy sources”.

The 2019 Law on the Use of Renewable Energy Sources provides, inter alia, for the legal regulation of measures of state support and incentives for the use of RES. Tariffs for electricity produced from RES will be set based on competitive bidding.

### Public sector environmental protection expenditures

The basic rules governing the structure, components and processes of Uzbekistan’s budgetary system are defined in the 2013 Budget Code. Annual budget laws are adopted by the Oliy Majlis, which is the supreme body of state power.

### Environmental fund

The Law on Nature Protection provides the legal foundation for the establishment of an environmental fund. The new fund operating since 2018 is regulated by the 2017 Resolution of the Cabinet of Ministers No. 375, which approves the Regulation on the order of formation and use of resources of the Fund for Ecology, Environmental Protection and Waste Management. This resolution has rendered invalid the 1993 Resolution of the Cabinet of Ministers No. 246 “On approval of the Regulation on the Funds for Environmental Protection”. The 2018 Resolution of the Cabinet of Ministers No. 820 “On measures to further improve the economic mechanisms for the protection of nature” stipulates the distribution of revenues collected from pollution charges between the Fund for Ecology, Environmental Protection and Waste Management and the state budget as of 1 January 2019.

### Forestry Development Fund

The legal foundation for the Forestry Development Fund is the 2017 Decree of the President No. 5041 “On the establishment of the State Committee on Forestry” and the Regulation on the order of formation and use of funds of the Forestry Development Fund of the

State Committee on Forestry (2017 Resolution of the Cabinet of Ministers No. 530).

#### Fund for Development of Water Supply and Sanitation Systems

The Fund was established by the 2018 Resolution of the President No. 4040 “On additional measures for the development of drinking water supply and sewerage systems”. This Fund is the successor of the Clean Water Fund, which was tasked with providing financial resources for the development of the drinking water networks. The Clean Water Fund was established by the 2017 Resolution of the President No. 2910 “On the programme of development and modernization of drinking water and sewerage systems for the period 2017–2021”.

#### Public procurement

Public procurement is regulated by the 2018 Law on Public Procurement.

#### Public–private partnerships

The 2019 Law on Public–Private Partnerships was adopted to enhance the legal framework for PPPs. The 2018 Resolution of the President No. 3980 “On priority measures to create a legal and institutional framework for the development of public–private partnership” has established the Agency for the Development of Public–Private Partnerships under the Ministry of Finance. The 2018 Resolution of the President No. 4040 provides the legal foundation for the use of PPPs for the provision of water supply and sewerage services.

#### *Policy framework*

Uzbekistan’s commitment to green economy is clearly stated in the policy document adopted in October 2019, the Strategy for Transition to Green Economy for the period 2019–2030 (2019 Resolution of the President No. 4477). The Strategy has the following priority areas:

- Increased energy efficiency in key economic sectors;
- Diversification of energy resources consumed and the development of RES;
- Climate change mitigation and adaptation, increased efficiency of the use of natural resources and conservation of natural ecosystems;
- Development of financial and other mechanisms to support green economy.

Implementation of the Strategy is to be ensured by the Intergovernmental Council to Promote and Implement Green Economy (composed of ministers and chairpersons of state committees). It is planned to prepare annual action plans for implementation of the Strategy. The Strategy does not include any assessment of costs of its implementation. Furthermore, no mechanism for reporting on implementation is envisaged by the Strategy.

The Concept on Environmental Protection until 2030 (2019 Decree of the President No. 5863), adopted in October 2019, provides for a number of measures to improve the use of economic instruments in support of environmental protection. The Concept envisages reduction of the amount of controlled pollutants; ensuring the dependence of pollution charges on the volume of emissions and discharges and their level of hazard to the environment and public health; and the introduction of feed-in-tariffs for renewable energy. It is also planned to develop a mechanism for the economic valuation of biodiversity and ecosystem services.

#### *Institutional framework*

The central state management body for environmental policy design and implementation is the State Committee on Ecology and Environmental Protection. Other relevant bodies include, notably, the State Committee on Forestry, the Ministry of Water Management and the Ministry of Agriculture, as well as the State Committee on Geology and Mineral Resources. The Ministry of Finance plays a central role in the design and implementation of public finance matters, including environment-related taxes. The Ministry of Economy and Industry is the key authority in charge of green economy. Local authorities have a mainly executive function in matters of environmental policy.

In October 2019, an Intergovernmental Council to Promote and Implement Green Economy (2019 Resolution of the President No. 4477) was established in Uzbekistan. Its members are predominantly ministers, deputy ministers and chairpersons of state committees.

#### *Coordination among institutions responsible for environmental protection at national, regional and local levels*

There is limited information on the coordination of environmental policy measures and related expenditures between central government and the regional/local government levels. More generally, the financial resources of local governments appear to

have been largely insufficient to effectively implement the tasks delegated to them in areas such as municipal waste management, water supply and sewerage and heat supply.

### 3.8 Assessment, conclusions and recommendations

#### *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

### 4.1 Environmental monitoring networks

#### *Air*

Since 2010, the number of air quality monitoring stations operated by Uzhydromet has decreased from 66 to 63 stationary posts. Atmospheric air pollution monitoring data is also collected at four other posts, where air sampling is carried out by laboratories of industrial enterprises or by the State Sanitary and Epidemiological Surveillance Service (SSESS) of the Ministry of Health. Atmospheric air pollution monitoring is carried out in 25 cities and settlements.

The 63 stationary posts operated by Uzhydromet are located in:

- Tashkent (13 stations);
- Fergana, Samarkand (four stations each);
- Almalyk, Angren, Andijan, Bekabad, Bukhara, Navoiy, Namangan, Chirchiq (three stations each);
- Gulistan, Karshi, Kokand, Nukus, Sariosiya, Urgench, Shakhrisabz (two stations each);
- Denau, Kagan, Kitab, Margilan (one station each).

Four other posts are located in:

- Mubarek (two stations at the Mubarek gas processing plant);
- Nurabad (one station at the Novo-Angrenskaya state district electric power station);
- Yangiyul (one station at the UzChimProm biochemical plant).

There are no automatic monitoring stations in the network. Monitoring is carried out daily, six days a week, three times a day (07:00, 13:00 and 19:00) at stationary posts of Uzhydromet. Samples are manually collected using air pumping through special absorbers for 20 minutes according to methodological guidance provided by Uzhydromet, and are analysed at the respective regional laboratory.

In total, 13 pollutants are monitored by Uzhydromet. However, not all these pollutants are monitored at every location. The most covered locations in terms of the number of parameters (8–10) covered are Almalyk, Angren, Andijan, Bekabad, Navoiy, Samarkand, Tashkent, Fergana and Chirchiq (table 4.1).

From August 2017, four heavy metals – cadmium, copper, lead and zinc – are also being monitored by Uzhydromet in Almalyk, Angren, Bukhara, Kokand, Navoiy and Tashkent Cities. In 2018, these four heavy metals were also monitored in Fergana City.

Uzhydromet also monitored PM<sub>10</sub> and PM<sub>2.5</sub> during the period 2011–2017 under the scope of a joint project with WHO. Measurements of PM<sub>10</sub> and PM<sub>2.5</sub> were carried out at only one station in Nukus and another in Tashkent (chapter 8). These measurements started in August 2011 and were discontinued in 2017 because the particles filters ran out and internal procurement rules have prevented Uzhydromet from successfully procuring new filters.

SSESS of the Ministry of Health monitors seven pollutants: dust, sulphur dioxide, carbon monoxide, nitrogen dioxide, hydrogen sulphide, hydrogen fluoride, ammonia.

Industrial enterprises monitor nine pollutants: dust, sulphur dioxide, carbon monoxide, nitrogen dioxide, hydrogen sulphide, phenol, hydrogen fluoride, ammonia, total hydrocarbon content. The two posts located at the Mubarek gas processing plant and one located at the Novo-Angrenskaya electric power station regularly monitor sulphur dioxide and nitrogen dioxide. The post located at the UzChimProm biochemical plant regularly monitors dust, sulphur dioxide and nitrogen dioxide.

Uzhydromet stations are divided into urban “background” stations in residential areas, “industrial” stations in the vicinity of enterprises and “transport” stations near highways or in areas with heavy traffic (table 4.2).

Table 4.1: Monitoring of air pollutants by location

	Dust	Sulphur dioxide	Carbon monoxide	Nitrogen dioxide	Nitrogen oxide	Ozone	Phenol	Solid fluoride	Hydrogen fluoride	Ammonia	Sulphates	Formaldehyde	Chlorine
Almalyk	✓			✓		✓	✓	✓	✓	✓			
Angren	✓	✓	✓	✓	✓	✓	✓			✓			
Andijan	✓	✓	✓	✓	✓					✓	✓		
Bekabad	✓	✓	✓	✓	✓	✓		✓		✓			
Bukhara	✓	✓	✓	✓	✓		✓			✓			
Gulistan	✓	✓	✓	✓	✓								
Denau	✓	✓	✓	✓	✓			✓					
Kagan		✓											
Karshi		✓											
Kitab		✓											
Kokand	✓	✓	✓	✓	✓					✓			
Margilan		✓											
Mubarek		✓											
Navoiy	✓	✓	✓	✓	✓	✓	✓			✓			
Namangan	✓	✓	✓	✓	✓		✓						
Nukus	✓	✓	✓	✓	✓		✓						
Nurabad	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓
Samarqand	✓	✓	✓	✓	✓		✓						
Sariyaya	✓	✓	✓	✓	✓				✓	✓			
Tashkent	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	
Urgench	✓	✓	✓	✓	✓		✓						
Fergana	✓	✓	✓	✓	✓	✓	✓			✓			
Chirchiq	✓	✓	✓	✓	✓	✓	✓			✓			
Shakhrisabz	✓	✓	✓	✓	✓		✓						
Yangiyul	✓	✓	✓	✓	✓		✓						

Source: Review of the state of air pollution in cities of the Republic of Uzbekistan on the territory of activities of Uzhydromet for 2018.



**Table 4.2: Air monitoring stations operated by Uzhydromet**

Type	Location	Number per location
Background stations	Tashkent	3
	Bukhara, Fergana	2
	Almalyk, Angren, Andijan, Bekabad, Kagan, Kitab, Navoiy, Namangan, Samarkand, Urgench, Chirchiq, Sharisabz, Margilan	1
Industrial stations	Tashkent	8
	Samarkand	2
	Almalyk, Angren, Andijan, Gulistan, Karshi, Kokand, Navoiy, Namangan, Nukus, Urgench, Fergana, Chirchiq	1
Transport stations	Tashkent	2
	Almalyk, Angren, Andijan, Bekabad, Bukhara, Gulistan, Denau, Karshi, Kokand, Navoiy, Namangan, Nukus, Samarkand, Fergana, Chirchiq, Sharisabz	1

Source: Review of the state of air pollution in cities of the Republic of Uzbekistan on the territory of activities of Uzhydromet for 2017.

Note: Four posts located in Mubarek, Nurabad, Yangiyul are not included.

The assessment of ambient air pollution is conducted in accordance with 2011 SanPiN No. 0293-11 “Hygienic standards of MACs of pollutants in the atmospheric air of populated areas in Uzbekistan”.

#### *Surface water*

##### Uzhydromet-operated network

In 2018, monitoring of the chemical composition of surface waters was conducted at 86 posts and 109 gauges located at 59 water bodies, while in 2009, surface water monitoring was conducted at 83 posts and 109 gauges located at 61 water bodies.

Monitoring of the chemical composition of surface waters is carried out by the surface water pollution monitoring laboratories of Uzhydromet in Tashkent and Fergana. Samples are manually collected at monitoring posts, stored in specific plastic bottles or glass containers, and transported to Uzhydromet’s surface water pollution monitoring laboratories for analysis. No analyses are carried out in the regional offices of Uzhydromet (other than in Tashkent and Fergana).

Chemical analysis is carried out to determine salt composition components, biogenic substances and other main and specific pollutants. Fifty-three parameters are monitored on a monthly basis for determining the hydrochemical composition of water: suspended substances, acidity, oxygen, oxygen saturation, carbon dioxide, rigidity, chlorides, sulphates, hydrocarbons, sodium, potassium, calcium, magnesium, mineralization, chemical oxygen consumption, biological oxygen demand 5, nitrogen

ammonium, nitrogen nitrite, nitrogen nitrate, amount of nitrogen, phosphates, silicon, electrical conductivity, redox potential, phosphorous common, iron common, copper, zinc, nickel, chromium common, Cr-VI, Cr-III, lead, mercury, cadmium, manganese, arsenic, phenol, oil products, synthetic surfactants, fluorine, cyanides, propane, dichlorodiphenyldichloroethane (DDE), insecticide, DDT, hexachlorane, lindane, DDD, metaphos, boutifos, dalapon, carbophos.

The location of posts where the monitoring of chemical composition was performed by Uzhydromet in 2018 is shown in table 4.3.

Monitoring of hydrobiological indicators of surface waters is conducted biannually, in spring and autumn. The main purpose of the hydrobiological monitoring is to assess the biological class and ecological condition of watercourses in comparison with the general level of water mass pollution.

In 2018, monitoring of surface waters using hydrobiological indicators was conducted at 27 gauges located at 10 water bodies: seven rivers (Kyzylcha, Dukantsay, Akhangaran, Ugam, Chirchik, Syr Darya, Kyzylsay) and three canals (Bozsu, Salar and Karasu).

The hydrobiological condition of the watercourses and the level of their pollution were determined by the indicators of periphyton and zoobenthos. Macrophytes were used as an auxiliary indicator. The final conclusion on the quality of water in the monitored gauges was made on the basis of formal saprobiotic indexes and changes in composition, structure and ecological state of aquatic biocoenoses.

**Table 4.3: Uzhydromet network for monitoring of chemical composition of surface waters**

	Water body	Number per water body	
Rivers	Zarafshan	6	
	Amu Darya, Syr Darya, Chirchik	5	
	Akhangaran	4	
	Kashkadarya	3	
	Surkhandarya, Akdarya, Karadarya, Margilansai	2	
	Obizarang, Karatag, Sangardak, Khalkadjar, Sherabad, Tankhizydarya, Amankutansay, Naryn, Isfairamsai, Kokandsai, Gedjigen, Zaaminsu, Kyzylcha, Dukantsai, Abdzhazsai, Pskem, Chimgansai, Ugam, Aktashsai	1	
	Lakes	Arnasay, Western Arnasay	1
	Canals	Karasu, Salar, Bozsu	2
Left-bank canal of the Chimkurgan reservoir, supplying canal of the Kattakurgan reservoir, outlet canal of the Kattakurgan reservoir, Grand Fergana canal, South Fergana canal, North Fergana canal, derivation canal of the Farkhad hydropower plant, right-bank canal of the Tuyabuguz reservoir, Kirov canal, Yuzhno-golodnostepsky canal, South Bukhara canal		1	
Water collectors and reservoirs	Siab collector, Srednekyzyltepinsky collector, Shuruzyak collector, GPK-S, Tuyamuyun reservoir, Kaparas reservoir, Sultansanzhar reservoir, Yuzhnosurkhan reservoir, Chimkurgan reservoir, Kattakurgan reservoir, Andijan reservoir, Tuyabuguz reservoir, Charvak reservoir	1	

Source: Yearbook of surface water quality in the territory of activities of Uzhydromet for 2018.

Uzhydromet's network of surface water monitoring also includes 19 hydrology observatories in 13 regions and 131 hydrological observation posts (located in 10 lakes and 121 rivers), where the following parameters are monitored: water level, water temperature, water flow and turbidity. Observations are carried out twice a day (at 8:00 and 20:00); when raining, observations are carried out every three hours. Most hydrological observations are usually carried out manually using old measuring equipment, and transmission of observed data is also mostly processed manually.

Uzhydromet also conducts background monitoring of surface waters in the Chatkal State Strict Nature Reserve in accordance with approved hydrological phases. In 2017, Uzhydromet conducted hydrobiological analysis of the Kyzylsai River in the Reserve.

#### Other networks

The State Committee on Geology and Mineral Resources monitors content of radionuclides and a number of toxic metals in the river waters of the Chatkal-Kuraminsk region's depleted uranium deposits and the Zarafshan river valley once every six months.

The State Inspectorate for Control and Supervision over the Technical State and Safety of Large and Particularly Important Water Management Infrastructure under the Ministry of Water Management monitors irrigation collector and

drainage water flows as well as quality (notably, mineralization level). Monitoring of irrigation collector and drainage water quality is carried out quarterly on 87 main collectors.

#### *Groundwater*

The State Committee on Geology and Mineral Resources keeps annual records of fresh, brackish and mineral groundwater.

The State Committee on Geology and Mineral Resources monitors hydrodynamic and hydrochemical parameters of groundwater on 97 water deposits and 87 springs and wells, and regularly checks 250 group and 28,000 single water intakes and 350 large industrial pollution sources located in all regions of the country.

There are 14 hydrological stations – two of which are located in Tashkent Oblast and one in each other oblast of the country. The work of all 14 hydrogeological stations is coordinated by the Groundwater Monitoring and Cadastre Centre of SUE "Uzbekhydrogeology".

Monitoring activities help to determine irregularities of seasonal and long-term hydrogeochemical and hydrodynamic groundwater regimes in natural and abnormal conditions, and allow the formation or depletion of groundwater reserves to be forecast.

As at January 2018, there were 1,495 observation wells in the network under the State Committee on Geology and Mineral Resources, 1,236 of which are located at 97 groundwater reserves, 165 at or near pollution sources and 94 at hydrotechnical facilities, rivers and canals.

There is an intention to expand the groundwater monitoring network to 2,650 observation wells by January 2022 (2017 Resolution of the President No. 2954), as the current groundwater monitoring system is considered by Uzbekistan as not sufficient for timely and comprehensive assessment of negative factors affecting the pollution of aquifers, depletion of groundwater resources and flooding of settlements.

The State Committee on Geology and Mineral Resources, the State Committee on Ecology and Environmental Protection (SCEEP) and the Institute of Seismology of the Academy of Sciences approve the monitoring methodology, how frequently and in what form monitoring information should be provided, and the timelines for providing monitoring information.

Groundwater level regime and springs flow are measured by the State Committee on Geology and Mineral Resources three times a month, and once a month in desert areas. The chemical composition, particularly mineralization, is monitored by collecting samples during the vegetation and non-vegetation period. Self-discharging and production wells are monitored by the State Committee on Geology and Mineral Resources during their assessment.

The State Committee also conducts daily monitoring of groundwater levels to determine the indicators for earthquake forecasting at five monitoring posts: Nukus, Bukhara, Gazli, Karshi and Syr Darya. Operational information is provided to the Forecasting Commission of the Academy of Sciences to assess seismic activity.

### *Drinking water*

SSESS of the Ministry of Health monitors pollution of surface waters and water bodies used for drinking water supply and recreation on a quarterly basis.

The Ministry of Health approves annual workplans for SSESS regional centres on monitoring water bodies in accordance with the State Standard “Drinking Water. Hygiene requirements and quality control” (O’zDSt 950:2011). The State Standard also provides the methodology on monitoring the quality of drinking water prior to its supply to the distribution networks.

SSESS has one national and 14 regional laboratories, where drinking water quality is monitored at different stages of treatment processes.

The number of water sampling posts located at water intake facilities, clean water reservoirs, pressure drains and the water supply distribution networks is approved in coordination with the regional bodies of SSESS.

Monitoring of water quality in centralized drinking water supply systems is carried out by certified laboratories of water supply enterprises. In 2018, the laboratories of water supply enterprises carried out drinking water quality monitoring using 8–11 indicators on a daily basis and 20–25 indicators on a monthly basis.

In 2018, the laboratories of water supply enterprises carried out drinking water quality monitoring using brief analysis indicators (total microbial number, number of *E. coli* bacteria, flavour, smell, turbidity, pH, permanganate oxidation, phyto and zooplankton) on a daily basis and using general physico-chemical analysis indicators (arsenic, nitrates, nitrites, lead, fluoride, dry residue, iron, rigidity, manganese, copper, polyphosphates, sulphates, chlorides, synthetic surfactants, petroleum products) on a monthly basis, collecting 90,000 samples at intakes of water supply distribution networks. A snapshot on drinking water monitoring in the capital is presented in box 4.1.

#### **Box 4.1: Drinking water monitoring in Tashkent City**

In Tashkent City, SUE “Suvsoz” monitors the quality of drinking water provided to households and enterprises on a daily basis. Sampling and analyses are carried out every hour at 10 chemical-bacteriological laboratories. Water comes from two groundwater and five surface water sources and is supplied through seven water facilities: Boz-Su, Kibray, Southern, Kadyryinsky, Kara-Su, Sergeli and Bektemir.

There are 366 manual monitoring posts located in all boroughs of Tashkent City. In 2010, there were 320 manual monitoring posts. The operational condition of all monitoring posts is checked on a monthly basis in accordance with the approved maintenance and repair work plan.

Monitoring data is not publicly available, but reports are provided to the Tashkent City government, the Ministry of Housing and Communal Utilities and other government agencies upon request.

In accordance with the requirements of the O'zDSt: 950:2011 standard, a total of 47 indicators are monitored, including microbiological, parasitological, toxicological, organoleptic and radioactive pollution indicators.

There are five types of water quality analysis:

- Brief analysis monitors the main bacteriological indicators – total microbial number, number of *E. coli* bacteria, taste, smell, turbidity, pH;
- General physico-chemical analysis monitors the most common components in water, both natural and introduced in the process of water treatment – arsenic, nitrates, nitrites, lead, fluoride, dry residue, iron, rigidity, manganese, copper, polyphosphates, sulphates, chlorides, synthetic surfactants, petroleum products;
- Special virologic and parasitological analysis monitors pathogenic intestinal protozoa and helminth eggs;
- Special toxicological analysis monitors highly toxic substances with carcinogenic effects – barium, boron, cadmium, molybdenum, nickel, mercury, selenium, strontium, chromium, cyanides, volatile halogenated hydrocarbons, benzene, benzopyrene, pesticides, phenol, chlorophenol and other potential chemical pollutants;
- Special radiation analysis monitors total alpha and beta radioactivity, as well as radionuclide pollution, where appropriate.

The content of each type of analysis and the periodicity for each type of monitored indicator are established in water quality control schedules, developed by water supply enterprises and approved by SSESS.

Special radiation analysis and sampling frequency are approved by local governments and SSESS depending on the radiation situation, but should be conducted at least once a year.

#### *Soil and land*

SCEEP monitors soil pollution in all regions of the country twice a year, in spring and autumn, using the following parameters: chlorides, sulphates, phosphates, nitrates, fluorine, calcium, phenol,

petroleum products, ammonium, heavy metals, carbonate, bicarbonate, chlorine, organochlorine pesticides and magnesium chlorate.

It also monitors soil pollution once every six months at industrial waste storage sites, sludge collector sites, tailing dump sites, pesticide burial sites and solid waste landfills (table 4.4).

The State Committee on Geology and Mineral Resources monitors dangerous exogenous geological processes at 746 locations in zones with active dangerous geological processes, such as the formation of landslides and additive cracks, floats, splits, caving, rockfalls, subsidence in mountain and foothill areas, particularly in the Fergana Valley and Jizzakh, Kashkadarya, Samarkand, Surkhandarya and Tashkent Oblasts. Monitoring is carried out between February and June, and during November–December. Reports with recommendations on improvement of the system on prevention and elimination of consequences of environmental disasters and accidents are provided to the Cabinet of Ministers and other central and local government agencies upon request.

Uzhydromet also monitors soil and land pollution. Background pollution of soil is monitored once every six months at the monitoring station located in the Chatkal State Strict Nature Reserve. Pollution of agricultural lands with pesticides is also monitored once every six months in all regions of the country for the following parameters: organochlorine pesticides, hexachlorane, organophosphorus pesticides, phosphamide, herbicides, defoliant (chlorates), pH and humus content.

Since 2016, Uzhydromet has been monitoring soil contamination in cities with large industrial enterprises. In 2016, this was done for Bukhara, Urgench and Chirchik. In 2017 such monitoring was done in Nukus, Uchkuduk and Samarkand. In 2018, 203 soil samples were collected in Kokand, Navoiy and Tashkent to determine the content of heavy metals, mercury, sulphates, nitrate nitrogen, ammonia nitrogen, arsenic, humus, pH, fluorine and petroleum products. Additionally, in 2018, soil around Almalyk and Bekabad Cities was monitored for the content of petroleum products. In 2019, monitoring of soil contamination will be conducted by Uzhydromet in Andijan, Bekabad and Namangan.



**Table 4.4: Soil pollution monitoring by the State Committee on Ecology and Environmental Protection at special sites**

Type	Oblast	Name of site
Industrial waste storage	Bukhara	Radioactive waste landfill (7.1 ha)
	Navoiy	Two industrial waste landfills (24 and 56 ha respectively), construction waste landfill of the Zarafshan Construction Department (20 ha), industrial waste landfill of the State Enterprise “Navoiy Mining and Metallurgical Plant” (6.4 ha)
	Samarkand	Industrial waste landfill of the State Enterprise “Navoiy Mining and Metallurgical Plant” (40 ha)
	Tashkent	Radioactive waste landfill of the former “Uzalmazzoloto” enterprise (68 ha), burial ground for physical nuclear isotopes managed by the Academy of Sciences (315 ha), landfill of toxic wastes of the former enterprise “Zargarlik” (0.64 ha)
Sludge collector	Bukhara	Open sludge collector of the Bukhara Oil Refinery and “Uzbekneftegaz” (0.26 ha)
	Kashkadarya	Sludge collector of the JSC “Uzkimesanoat” (4.7 ha)
	Navoiy	Two sludge collectors of the JSC “Electrohimpzavod” and JSC “Uzkimesanoat” (5.34 and 125 ha respectively), one sludge collector of the JSC “Navoiyazot” (10 ha)
	Samarkand	Sludge collector of the “Samarkand-Geology” (0.4 ha), sludge collector of the JSC “Samarkand kime zavodi” (181.96 ha)
	Surkhandarya	JSC “Jarkurganefit” and “Uzbekneftegaz” sludge collector (0.03 ha)
	Syrdarya	Four sludge collectors of the Syrdarya thermal power plant and JSC “Uzbekenergo” (1.4, 1.15, 1.45 and 2 ha respectively)
	Tashkent	Four sludge collectors of the JSC “Maksam-Ammofos” (268.8 ha), Almalyk Mining and Metallurgical Plant (153 ha), Uzbek Refractory Metals Plant (40 ha), JSC “Maksam-Chirchik” (10 ha)
Fergana	Four sludge collectors of the Fergana Oil Refinery and “Uzbekneftegaz” (0.5 ha), JSC “Fargonaazot” and JSC “Uzkimesanoat” (8 ha), Altyaryk Oil Refinery and “Uzbekneftegaz” (0.26 ha), JSC “Kuvasyoshifer” and JSC “Uzstroyaterialy” (3 ha)	
Tailing dumpsite	Jizzakh	Marjanbulak mine (46 ha)
	Kashkadarya	JSC “Uzkimesanoat” tailing dump (50 ha)
	Navoiy	Four tailing dumpsites of the Navoiy Mining and Metallurgical Plant (630, 952, 2,500 and 720 ha)
	Namangan	Almalyk Mining and Metallurgical Plant (40.7 ha)
	Samarkand	Ingichka Metalist enterprise (33 ha)
	Surkhandarya	Almalyk Mining and Metallurgical Plant (12 ha)
	Tashkent	Two tailing dumpsites of the Almalyk Mining and Metallurgical Plant (1,010 and 1,388.6 ha), one tailing dumpsite of the Navoiy Mining and Metallurgical Plant (83 ha), and Brichmulinsk tailing dumpsite (7 ha)
Pesticide burial	Republic of Karakalpakstan	Karauzyak (12.5 ha)
	Andijan	Zaurak (3 ha)
	Bukhara	Kunjikala (2 ha)
	Jizzakh	Bogdon (5 ha)
	Kashkadarya	Pachkamar (3.3 ha)
	Navoiy	Malikchul (3.3 ha)
	Namangan	Bogibaland (11.4 ha)
	Samarkand	Sezagan (2 ha)
	Surkhandarya	Navruz (5 ha)
	Syrdarya	Yangier (1.5 ha)
	Fergana	Akbarabad (0.8 ha)
Khorezm	Okmachit (4 ha) and Tuprokkala (1 ha)	
Solid waste landfill	Republic of Karakalpakstan	Nukus city (50 ha);
	Andijan	Andijan (5 ha), Asaki (6 ha), Altykul (3 ha), Markhamat (area not known);
	Bukhara	Bukhara (20 ha), Gijduvan (4,6 ha), Karakul (4 ha), Peshkuy (2 ha), Shafirkan (5 ha)
	Jizzakh	Jizzakh (26.5 ha)
	Kashkadarya	Karshi (46,95 ha)
	Navoiy	Navoiy (10 ha), Uchkuduk (15 ha), Zarafshan (24 ha), Navbakhar (3 ha), Nurata (3 ha)
	Namangan	Namangan (8.2 ha), Kasansay (5 ha)
	Samarkand	Urgut (1.5 ha), Pastdargom (2 ha), Kattakurgan city (10 ha), Narpay (5 ha), Ishtykhan (1 ha), Akdarya (2 ha), Paiaryk (5 ha), Koshrobat (3 ha), Solid waste landfill (1.64 ha), Kattakurgan landfill (5 ha), Pakhtachi (5 ha), Tailak (2 ha), Samarkand (10 ha), Jambay (2 ha), Bulungur (7 ha)
	Surkhandarya	Termez (60 ha), Jarkurgan (2 ha)
	Syrdarya	Gulistan (20 ha), Yangier (3.5 ha), Bayaut (3 ha), Syrdarya city (3 ha), Shirin (1.2 ha)
	Tashkent	Bustanlyk (5 ha), Bekabad (3.2 ha), Chirchik (10 ha), Almalyk (6 ha), Urta-Chirchik (5 ha), Zangiata (8 ha)
Fergana	Kokand city (23 ha), Margilan (11 ha), Besharyk (5 ha), Furkat (2 ha), Uzbekistan landfill (4 ha), Fergana landfill (1 ha)	
Khorezm	Bagat (1 ha), Gurlen (5 ha), Kushkupyrt (7 ha)	

Source: Programme of Environmental Monitoring for the period 2016–2020.

The State Committee on Land Resources, Geodesy, Cartography and State Cadastre monitors concentrations of organochlorine pesticides and heavy metals as well as soil salinity and nutrient content (nitrogen, phosphorus, potassium) in all regions on a quarterly basis. The State Committee also monitors the salinity of irrigated lands in the Republic of Karakalpakstan, Kashkadarya, Navoiy and Samarkand Oblasts (706,400 ha) and Andijan, Bukhara, Namangan, Surkhandarya, Tashkent and Fergana Oblasts (798,900 ha). It also carries out monitoring of soil pollution related to the operations of the Tajik Aluminum Company in the northern districts of Surkhandarya Oblast.

The State Committee also conducts periodic accounting of land composition and compiles an inventory of reclaimed agricultural lands of the country.

SSESS of the Ministry of Health also monitors soil pollution in accordance with SanPiN No. 0191-05 “Sanitary maximum permissible concentrations and tentatively permissible concentrations of exogenous harmful substances in soil”. The following indicators are monitored twice a year, in spring and autumn: benzopyrene, vanadium, manganese, tungsten, dicofol (kelthane), cobalt, copper, molybdenum, nickel, coal flotation waste, lead, sulfur, sulfuric acid, phosphates, furfuryl, chromium, alfamethylstyrene, benzene, cumene (isopropylbenzene), hydrogen sulfide, styrene, formaldehyde, liquid complex fertilizers, complex granular fertilizers, nitrates, potassium chloride, acids, arsenic, mercury, lead + mercury, antimony, toluene, fluorine, zinc.

#### *Noise*

No noise monitoring activities are carried out by governmental institutions or organizations in Uzbekistan under the state environmental monitoring programme.

#### *Radioactivity*

Uzhydromet measures natural radioactivity of air and collects radioactivity samples at 82 stations across the country. Sampling is carried out once a week, except for major industrial complexes, where sampling is carried out twice a week.

The State Committee on Geology and Mineral Resources monitors the content of radionuclides in rivers near depleted uranium deposits located in the Chatkal-Kuraminsk area and the Zarafshan River valley once every six months. It also monitors radiation and the content of radionuclides in soil of

depleted uranium deposits, as well as radiation in large settlements every six months.

SCEEP monitors radiation of soil in large settlements of the country and depleted uranium deposits on an annual basis. It also monitors two radioactive waste landfills located in Bukhara and Tashkent Oblasts once every six months.

#### *Biodiversity*

Most biodiversity monitoring is conducted in PAs, in particular those having the legal status and dedicated personnel, although, as of 2018, the populations of some rare and threatened Red Book species were also monitored outside PAs.

Field studies are regularly conducted on 11 species of animals included in the Red Book, including one reptile species (Central Asian cobra) and 10 mammal species (chapter 11).

As at 2019, regular monitoring of selected wildlife species listed in the Red Book is carried out by scientific departments of individual PAs with the support of the Academy of Sciences. For example, the Tien-Shan brown bear is monitored in Ugam-Chatkal State Biosphere Reserve (SBR), Gissar State Strict Nature Reserve (SSNR) and Kitab SSNR; Turkestan lynx is monitored in Ugam-Chatkal SBR, Chatkal state biosphere strict nature reserve (SBSNR) and Gissar SSNR; and Przewalski’s horse, goitered gazelle and Asiatic wild ass are monitored in the Species Breeding Centre (SBC) “Jeyran” (chapter 11). For plant species listed in the Red Book, monitoring is conducted only in the Gissar SSNR, by specialists from its scientific department.

The State Committee on Forestry also carries out flora and fauna monitoring activities for selected species on the lands of the state forest fund and the hunting grounds. Also, the Uzbek Fishery Association conducts the autumn count of the number of game animals inhabiting the territory of 41 hunting and fishing farms, including waterfowl, pheasant and keklik, as well as certain species of mammals, such as hare, wild boar and mountain goat.

In 2015–2016, the International Fund for Saving the Aral Sea (IFAS) Agency in Uzbekistan conducted monitoring of more than 230 species of birds on Lake Sudochie. In 2017, as part of the “Monitoring biodiversity of the South Aral Sea region wetlands” project, the IFAS Agency and the Uzbekistan Society for the Protection of Birds (UzSPB) organized field studies on Jyltyrbas Lake.

Nevertheless, despite numerous activities being carried out, long-term research on wild species of flora and fauna, especially key Red Book-listed fauna species, suffers from the lack of continuity. The geographical scope of biodiversity monitoring is limited, and the quality is influenced by the lack of scientific personnel to conduct such monitoring (chapter 11).

#### *Forests*

Forest management enterprises conduct annual seasonal evaluations of forests under their responsibility, and report monitoring results in a statistical form to the State Committee on Forestry and the State Committee on Statistics.

No modern forest inventory has been carried out since 1987, and a comprehensive scientific inventory of Uzbekistan's forest resources is not yet available. Nonetheless, during the period 2016–2019, progress was made towards the development of a sustainable

forest management (SFM) plan including SFM criteria and indicators and elements for a new forest reporting system, under the scope of a joint ECE–FAO (Food and Agriculture Organization of the United Nations) project in collaboration with the State Committee on Forestry. The SFM plan is yet to be approved.

#### **4.2 Analytical laboratories**

##### *Ministry of Health*

SSESS of the Ministry of Health has one national, 14 regional and 193 city and district-level laboratories.

The Scientific Research Institute of Sanitation, Hygiene and Occupational Diseases under the Ministry of Health has 11 specialized laboratories based in Tashkent, including the water and soil hygiene laboratory, the atmospheric air hygiene laboratory, the laboratory of hygiene and toxicology of pesticides and fertilizers and the analytical chemistry laboratory.

**Photo 4: Wild ass (*Equus hemionus*) in the Species Breeding Centre “Jeyran”**



*Photo credit: Ms. Mariya Gritsina*



*SUE “Suvsoz”*

The SUE “Suvsoz” based in Tashkent City has 10 chemical-bacteriological laboratories, where tests on drinking water quality are carried out daily on an hourly basis.

*Uzhydromet*

Uzhydromet has 22 analytical laboratories, six of which are based in Tashkent: air pollution monitoring, soil pollution monitoring, surface water pollution monitoring, radioactive pollution monitoring, physico-chemical methods of analysis and hydrobiological laboratory. The Fergana Oblast office of Uzhydromet has two laboratories monitoring air and surface water pollution, while all other regional laboratories under Uzhydromet analyse air pollution samples only. All 22 analytical laboratories are certified.

*State Committee on Ecology and Environmental Protection*

SCEEP has 15 analytical laboratories: the Centre for Specialized Analytical Control on Environmental Protection (CSAC) based in Tashkent and regional laboratories in each of 12 oblasts, the Republic of Karakalpakstan and Tashkent City. Four analytical laboratories are accredited (CSAC and the regional laboratories in Tashkent, Fergana and Surkhondaryo Oblasts). Eleven analytical laboratories are certified. All of them monitor air, surface water and soil pollution.

There is currently no portable (mobile) laboratory capacity to monitor sources of pollution.

**4.3 Availability of environmental information***Data reporting by enterprises*

Self-monitoring of emissions is carried out only by large industrial enterprises (e.g. cement plants). The self-monitoring information is submitted by the enterprises to the respective territorial bodies of SCEEP.

*Pollution-at-source monitoring by CSAC*

Companies subject to pollution-at-source monitoring – notably, companies of categories I and II – are monitored by CSAC under SCEEP. CSAC’s pollution-at-source monitoring includes the monitoring of air emissions from enterprises (on a monthly basis), discharges from wastewater treatment plants in water bodies and from other enterprises in urban wastewater

collection systems (every three months), and soil contamination (carried out twice a year, in autumn and spring). Although these activities are formally called “monitoring”, in essence they are part of periodical environmental inspections of the listed facilities agreed by the Business Ombudsperson (chapter 2).

In 2018, monitoring of air emissions at source was carried out in 157 enterprises (mostly industrial facilities), wastewater monitoring in 110 enterprises, and soil contamination in 75 enterprises (including tailings and sludge pits of large industrial enterprises, oil refineries and oil depots, large mineral fertilizers and toxic chemicals warehouses, pesticide burial grounds and former agricultural airfields) (table 2.6). CSAC consolidates data from pollution-at-source monitoring activities in its electronic monitoring database.

*Statistical data*

The Department of Agriculture and Ecology Statistics of the State Committee on Statistics collects environmental statistical data. Such data is collected through statistical forms covering data on air emissions at source; generation, disposal and storage of wastes; environmental protection costs and environmental pollution payments; land reclamation; forest areas and reforestation; and hunting.

In 2017, the number of environmental statistical data forms has been reduced, mostly by merging several forms into one, in order to simplify data collection, but the volume and content of collected data has not changed. As at 2019, the following six environment-related statistical forms are in use:

- 1-ECO: report on nature protection;
- 2-ECO: report on protected areas;
- 3-ECO: report on land reclamation;
- 1-OX: report on forestry;
- 1-OX: report on hunting activities;
- 1-KV: report by small and micro-enterprises on nature protection.

Environment-related data are made publicly available by the State Committee on Statistics in the publications “Main Indicators of Nature Protection and Rational Use of Natural Resources, Forestry and Hunting” (published annually) and “Uzbekistan in Figures”, which are both distributed in a limited print run as sales publications only. Outside the system of governmental authorities, environmental statistics are made available upon request and only for a fee. While a significant revamping of the State Committee on Statistics’ website was undertaken in 2017 and many statistics started to be published online following the



2017 Resolution of the President No. 3165, as at October 2019, the State Committee on Statistics does not yet upload environmental statistical data onto its website except for two tables (“Protected areas” and “Air emissions by oblast”).

The System of Environmental-Economic Accounting (SEEA) has not yet been introduced in Uzbekistan. It is envisaged to gradually develop and introduce SEEA through joint efforts of ministries and agencies.

The State Committee on Statistics devotes significant attention to gender statistics and maintains a dedicated portal (<https://gender.stat.uz/>); however, no gender and environment statistics are collected. This is an important area to develop considering the requirements for gender-disaggregated information for monitoring the Sustainable Development Goals.

### *Databases*

#### Pollution sources monitoring database

CSAC under SCEEP maintains a “pollution sources monitoring database” and a portal for internal use, with data on air emissions, wastewater discharges and soil contamination ([miz.uznature.uz](http://miz.uznature.uz)). The online portal has been operational since 2013. Access to the online portal is password restricted since it is used as an internal tool for collecting data from the territorial offices of SCEEP – entered directly into the system by specialists in each oblast – as well as for centralized data management.

All data entered in the database are georeferenced in preparation for future integration with geographical information systems (GIS) tools. While GIS functionalities and analytics are not yet in place due to a lack of funds, the database already enables the extraction of data per pollutant, per period, per region and by other parameters.

CSAC has also developed a portal (<http://csak.uz/ru/>) for both internal and external access, which is still in the pilot phase but is expected to be operational by the end of 2019. In the future, the portal will be used to collect emissions data entered directly by enterprises and will display simplified aggregated data to the public (e.g. number of companies and parameters monitored, but not monitoring results). Government agencies will have full access to the complete database (through a passport-protected level of access), while the public will have access only to aggregated data visualizations. 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 pollutant release and transfer register in Uzbekistan in line with modern international standards. CSAC is seeking funds to complete the portal and make it fully operational.

#### State Water Cadastre

The State Water Cadastre, maintained by Uzhydromet, contains annual and long-term data on the surface water regime and resources, as well as information on the use and quality of both surface and groundwater resources.

Work is under way by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) to conclude the development of a digital State Water Cadastre Information System powered by GIS tools under the scope of an EU-funded programme on “Sustainable water management in rural areas of the Republic of Uzbekistan”, which will also digitize the Cadastre of Hydraulic Structures (coordinated by the State Inspectorate for Control and Supervision over the Technical State and Safety of Large and Particularly Important Water Management Infrastructure (Gosvodhoznadzor)) and develop a similar GIS-supported information system.

Once finalized, both cadastre information systems will enable real-time sharing of data and information among all project-participating agencies (Uzhydromet, the State Committee on Geology and Mineral Resources and the Ministry of Water Management) and will also support the preparation of maps and reports. It is expected that selected data from the State Water Cadastre will also be made publicly available online.

#### State cadastres of flora and fauna

The Academy of Sciences carries out cadastral works for the state cadastres of flora and fauna. Outcomes of research by the Academy of Sciences are provided to SCEEP for inclusion into the cadastres. Due to the lack of targeted funding for cadastral works, the Institute of Botany of the Academy of Sciences collects data on rare species in stages, by administrative regions of the country, within the framework of research projects funded in the form of governmental grants (chapter 11). Some of the cadastre data is georeferenced, particularly data regarding rare plant species listed in the national Red Book.

#### *Environmental indicators and their use*

During the period 2010–2011, the then State Committee for Nature Protection improved a database

of 91 environmental indicators (78 short-term indicators, 8 medium-term indicators and 5 long-term indicators) that had been previously developed under the scope of a United Nations Development Programme (UNDP) project that promoted the application of the environmental indicators developed by ECE. The set of 91 indicators includes 20 indicators on atmospheric emissions, 25 on water resources, 14 on land resources, 9 on waste, 6 on biodiversity, 6 on climate change, 5 on public health, 4 on energy and 2 specifically related to the Aral Sea. The improvement made in 2010–2011 referred to the introduction of GIS technology. Furthermore, the overall database was improved for better collection, storage, analysis and sharing of data. There is no evidence that the database is still in use in 2019. According to the State Committee on Statistics, it produces 17 out of 91 environmental indicators; some of these 17 indicators are produced jointly with relevant ministries and agencies.

#### *Indicators and information for the Sustainable Development Goals*

In 2018–2019, a national Sustainable Development Goals indicator framework was developed under the leadership of the State Committee on Statistics, building on the global Sustainable Development Goals indicator framework and also taking additional indicators into account. The national indicator framework was endorsed in March 2019, including a total of 206 indicators, of which 46 relate to the environment. Of the 46 environment-related indicators, only nine are considered as Tier I, i.e. have data available and no methodological problems. Others are categorized as Tier II or III, meaning that data on those is currently not collected or not available or that there are gaps in national methodologies.

In some circumstances, the national indicators have a different, usually 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, such as:

- National indicator 3.9.1 Mortality rate attributed to the toxic effect of chemicals per 100,000 population (instead of global indicator 3.9.1 Mortality rate attributed to household and ambient air pollution) (box 8.3);
- National indicator 6.1.1 Proportion of population using: a) centralized water supply, b) alternative sources of water supply (instead of global indicator 6.1.1: Proportion of population using safely managed drinking water services) (box 9.3);

- National indicator 7.2.1 Proportion of electricity generated from renewable energy sources in total electricity generation (instead of global indicator 7.2.1 Renewable energy share in the total final energy consumption) (box 12.1);
- National indicator 6.3.2 Water pollution index (WPI) (instead of global indicator 6.3.2 Proportion of bodies of water with good ambient water quality) (box 9.3);
- National indicator 6.4.1 Water consumption per unit of GDP, m<sup>3</sup>/US\$1,000 of GDP (PPP) (instead of global indicator 6.4.1 Change in water use efficiency over time), although Uzbekistan reported under the global indicator 6.4.1 in 2018 (box 9.3);
- National indicator 11.4.1 State budget expenditure on cultural development per capita (instead of global indicator 11.4.1 (Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)) (box 6.1);
- National indicator 12.4.1 Existence of international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement (instead of global indicator 12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement);
- National indicator 12.5.1 Processing level of municipal solid waste, percentage (instead of global indicator 12.5.1 National recycling rate, tons of material recycled) (box 10.1);
- National indicator 15.4.1 Proportion of protected mountain ecosystems in their total area (instead of the global indicator 15.4.1 Coverage by protected areas of important sites for mountain biodiversity) (box 11.1).

Under target 15.5, Uzbekistan legitimately added the national indicator 15.5.2 The number of species listed in the national Red Book, as the global indicator 15.5.1 Red List Index was inappropriate for the country (box 11.1). However, the absence of two global indicators (6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation and 15.1.2 Proportion of important sites for terrestrial and

freshwater biodiversity that are covered by protected areas, by ecosystem type) among the national indicators of Uzbekistan cannot be explained and justified, especially since Uzbekistan reported on global indicator 6.5.2 in 2018 (box 6.4).

Uzbekistan makes indicator data available to the public through its dedicated national Sustainable Development Goals portal (<http://nsdg.stat.uz/>). The website was designed to provide centralized access to information resources that will track the implementation of Sustainable Development Goals and targets adopted by Uzbekistan. Of the total of 206 indicators in the national indicator framework, as at May 2019, data is provided online for 64 indicators, including 10 of the 46 environment-related indicators (6.3.1, 7.2.1, 7.3.1, 7.b.1, 11.2.1, 11.3.1, 11.7.1, 12.4.2.1, 12.4.2.2 and 12.b.1). The portal is mostly in Russian, with some pages also available in English and Uzbek.

The Roadmap on implementation of the national goals (2018 Resolution of the Cabinet of Ministers No. 841) identifies the need for the development of national indicator methodologies in coordination with the United Nations Statistical Commission and other United Nations bodies, and for the exchange of international experience. It also foresees the inclusion of statistical data collection on national indicators in the State Statistical Work Programme.

#### *Implementation of Shared Environmental Information System (SEIS) principles*

Uzbekistan participates in the work of the ECE Working Group on Environmental Monitoring and Assessment and the ECE Joint Task Force on Environmental Statistics and Indicators, which support countries in Europe and Central Asia to establish SEIS by 2021.

Uzbekistan does not yet fully implement SEIS principles of open access to environmental data.<sup>16</sup> While comprehensive sets of environmental data and information (e.g. including environmental monitoring data, environmental indicators and statistics, environmental reports, etc.) are regularly produced and information is stored and processed in the organizations that collect it (i.e. managed at source), it is not easily shared as many and long approvals are required, making it difficult to exchange and submit data in a timely manner in support of reporting processes. In addition, most environmental data and

information is only shared among government agencies, and only a fraction is made available and accessible to the public, mostly upon request and on payment of a fee.

Many periodic reports and bulletins (e.g. regular reports on the outcomes of environmental monitoring produced by Uzhydromet, information bulletins produced by CSAC, etc.) are accessible only to selected government agencies. Other reports, such as the State Committee on Statistics publications “Main Indicators of Nature Protection and Rational Use of Natural Resources, Forestry and Hunting” and “Uzbekistan in Figures” are made available only in print form and through limited print runs and, although available for purchase in print format, are not accessible online. There is very limited online accessibility to environmental data and information.

#### *Environmental reporting and publication of environmental data*

##### State of the Environment Report

According to national regulations, SCEEP is tasked with publishing every year a national report on the state of the environment and use of natural resources. The last edition of the report was published in 2013, covering the period 2008–2011. This last edition of the report is not available online, and no other State of the Environment Report has been produced since.

In addition to being outdated, the latest report is largely descriptive, does not follow the widely used D-P-S-I-R (driving forces–pressure–state–impact–response) analytical framework, nor is it an indicator-based report, in spite of including a variety of informative data and indicators presented in various formats.

##### Information Bulletin on the State of Pollution Sources and their Impact on the Environment

CSAC under SCEEP produces quarterly reports and an annual Information Bulletin on the State of Pollution Sources and their Impact on the Environment.

The quarterly report and annual Information Bulletin are based upon monitoring data collected by the territorial units of SCEEP and sent to CSAC for processing.

<sup>16</sup> SEIS principles of open access to data: data are managed as close as possible to the source, and data are collected once and shared for many purposes.

The latest annual Information Bulletin covers the period 2013–2017 and includes detailed information and data on air emissions, wastewater discharges and soil contamination at industrial enterprises and other sites. It also includes data on exceedances of pollution levels by individual enterprises, comparing these to established limit values (for air pollution) and relevant MACs (for water and soil quality).

Neither the quarterly reports nor the annual bulletin, and the data therein, are made publicly available.

#### Information Bulletin on the State of Groundwater and its Use

The State Committee on Geology and Mineral Resources operates a groundwater database on the levels and quality of groundwater and publishes an annual Information Bulletin on the State of Groundwater and its Use, including information on trends in underground water reserves.

This annual bulletin is distributed to approximately 40 government agencies and institutions, including SCEEP, the State Committee on Land Resources, Geodesy, Cartography and State Cadastre, the Ministry of Housing and Communal Utilities, khokimiyats, etc.

Neither the annual bulletin nor the data therein are made publicly available.

#### Environmental monitoring bulletins and reports produced by Uzhydromet

Uzhydromet publishes a variety of daily, monthly, quarterly and annual information products, including different types of bulletins and reports on its air quality, surface water quality and soil pollution monitoring activities (table 4.5). With the exception of the daily environmental bulletin on air pollution in Tashkent City, no other environmental monitoring information is made publicly available.

### **4.4 Science and research in support of environmental protection**

#### *Policies and priorities*

In 2012, the then operational Committee for the Co-ordination of Science and Technology Development under the Cabinet of Ministers formulated eight priorities for research and development to 2020, based on national needs. Two of these research priorities focused on energy and resource savings, and the development of renewable energy, and have led to the establishment of dedicated research institutes. Another

research priority focused on agriculture, biotechnology, ecology and environmental protection, and another on Earth sciences, notably on geology, geophysics, seismology and raw mineral processing. In parallel, in 2012, the institutional reform led to the restructuring of several institutions under the Academy of Sciences with the aim to reorient academic research from basic to applied research.

The Action Strategy on Five Priority Directions for Development for the period 2017–2021 (2017 Decree of the President No. 4947) prompted stronger focus on science and innovation. As part of the large-scale reforms that started in the country in 2017, the Ministry of Innovation Development was created in November 2017 to promote innovation in all sectors of the economy and provide strategic planning and prioritization of scientific research activities and technology development. It is charged with promoting sectoral innovation, also including innovation on environmental protection and environmental management.

The 2018 Strategy for Innovative Development for the period 2019–2021 (2018 Decree of the President No. 5544), together with a roadmap for its implementation, specifically focuses on stimulation of research and innovation, and the creation of scientific laboratories and technology centres at universities and research institutes. Developed with support from UNDP, it focuses on the development of human capital to foster Uzbekistan's competitiveness and innovation. Among other activities, the Strategy promotes the integration of education, science and industry, and an increase in the investment of public and private funds into innovation, science and research. However, environmental protection is not a prominent component of the Strategy. While the Strategy does not define specific sectoral priorities for research and innovation, the roadmap foresees the definition by 1 March 2019 of priority areas of science and technology for the development and financing of targeted state scientific and technical programmes, technology transfer and commercialization. As at June 2019, the planned prioritization of scientific and technological areas/sectors had not yet been carried out.

#### *Scientific research on environment-related issues*

Scientific research, applied research and technological development in fields directly related to environmental protection are conducted by several scientific and research institutes. So far, the increased focus of the Government on science and innovation has not manifested itself in significant changes in the



activities of these institutions, either in terms of widening of the scope of research or in terms of enhanced funding, staff or equipment. Applied research on environment-related issues, notably on

renewable energy, is a strong point in activities of the Physics and Technical Institute “Physics-Sun” of the Academy of Sciences but not of other scientific and research institutes.

**Table 4.5: Information products regularly prepared by Uzhydromet**

Information product	Frequency	Distribution list/target users
Daily environmental bulletin on air pollution in Tashkent city	Daily	Public information posted on the website of Uzhydromet
Monthly air pollution information for Tashkent, Almalyk, Angren, Bekabad, and Chirchiq cities	Monthly	The Cabinet of Ministers, SCEEP, Tashkent Regional Department on Ecology, Tashkent City Department on Ecology, Center for Specialized Analytical Control, Khokimiyat of Tashkent city, the Ministry of Emergencies, the Prosecutor's Office, the Ecological Movement of Uzbekistan, and the laboratories of Almalyk, Angren, Bekabad, Chirchiq cities
Monthly information on high and extremely high environmental pollution events	Monthly	The Cabinet of Ministers, SCEEP and laboratories of Almalyk, Angren, Bekabad and Chirchiq cities
Monthly bulletin on water quality of primary water courses (as per defined hydrochemical indicators)	Monthly	The Cabinet of Ministers, SCEEP, Tashkent Regional Committee on Ecology, Center for Specialized Analytical Control, the Prosecutor's Office, the Ecological Movement of Uzbekistan, the Ministry of Water Management, Uzhydromet in Navoiy, Nukus, Samarkand, Termez, Fergana, Bukhara, and Andijan cities
Monthly bulletin on environmental condition of the primary water courses of Tashkent Oblast and water quality (as per defined hydrobiological indicators)	Monthly Mar.-Nov.	SCEEP, the Ecological Movement of Uzbekistan
Quarterly note on the state of environmental pollution in the Republic of Uzbekistan	Quarterly	SCEEP (for a summary report preparation to the Cabinet of Ministers)
Information on the state of environmental objects of Chirchiq city and the territory adjacent to it following the results of monitoring	Monthly	Center for Specialized Analytical Control of the SCEEP
Information on air and surface water pollution in the area of influence of Tajik Aluminium Company TALCO	Quarterly	Senate of the Oliy Majlis of the Republic of Uzbekistan
Information on surface water quality of the Zarafshan river basin	Quarterly	Senate of the Oliy Majlis of the Republic of Uzbekistan
Data on the air and surface water pollution level in the area of influence of Tajik Aluminium Company TALCO	Monthly	Saryasiyan Air Pollution Monitoring Laboratory
Information on air, surface water and soil pollution in the area of influence of Tajik Aluminium Company TALCO	Quarterly	Center for Specialized Analytical Control of the SCEEP
Information on the state of environmental objects of the Republic of Uzbekistan according to observation data of Uzhydromet in accordance with the 2014 Resolution of the Cabinet of Ministers No. 216	Quarterly	SCEEP
Report on environmental pollution monitoring to prepare a National Report	Annually	SCEEP
Review of the state of air pollution in cities of the Republic of Uzbekistan on the territory of activities of Uzhydromet	Annually	Ministry of Health, SCEEP
Yearbook of soil pollution in the Republic of Uzbekistan on the territory of activities of Uzhydromet	Annually	Ministry of Health, SCEEP
Yearbook of surface water quality in the territory of activities of Uzhydromet	Annually	Ministry of Health, SCEEP
Annual data on quality of terrestrial surface water. Basins of the Syrdarya and Amudarya rivers	Annually	Stored at the Service for Monitoring Air, Surface Water and Soil Pollution as an archive of primary data
Report on surface water quality for the Yearbook on Water Cadastre	Annually	State Water Cadastre Department of Uzhydromet

Source: Uzhydromet, 2019.

Research projects focused on the inventory and assessment of flora and the collection of data on rare plant species are implemented by the Institute of Botany of the Academy of Sciences. Modern geographical information technologies (GIS, remote sensing) are used to conduct cadastral works, geobotanical studies, mapping and assessment of vegetation in the arid zones of Uzbekistan. Since 2012, the Institute has been digitizing the National Herbarium of Uzbekistan, using modern information technologies. The main research product of the Institute is the publication “Flora of Uzbekistan”.

Research activities focusing on the identification and assessment of species are also conducted by the Institute of Zoology of the Academy of Sciences. The Institute maintains seven zoological collections and has a wide range of research activities on entomology and parasitology, focusing on ways to fight pests (particularly, pests present in the agricultural sector). Research is under way on rare and widespread species of vertebrates (reptiles, birds and mammals) with emphasis on the use of non-invasive methods of observation (e.g. camera traps). Forecasting of the impact of radiation in rare animal species is another topic of research.

Research activities in the field of molecular biology, genetics and genomics in support of the development of transgenic varieties of cotton, wheat and other plants are carried out at the Centre of Genomics and Bio Informatics of the Academy of Sciences, founded in 2012. Its main areas of research include: complex analysis of genomes and genetic diversity, proteins and metabolites of agricultural crops, medicinal and industrial plants, using modern genomics and bioinformatics; and development of programmes for modern genetic and cellular engineering of new varieties of plants resistant to pests and diseases and adapted to different soil and climatic conditions. The Centre is also working on developing new salt- and drought-resistant crops of cotton, wheat, pomegranate and potato, particularly for the Aral Sea region.

Fundamental and applied research on high energy physics, solid body theory, semiconductor physics and solar energy transformation is conducted by the Physics and Technical Institute “Physics-Sun” of the Academy of Sciences, founded in 1943. The Institute has eight laboratories, two of which are occupied with solar PV applications and solar thermal applications. The Institute regularly collaborates with SCEEP, providing expertise when required. It also runs a variety of research projects including solar power and solar thermal pilot projects in the horticulture sector (notably solar dryers and greenhouses, solar-powered water pumping) and in rural settlements (solar water

heating, solar-powered water extraction and drinking water distribution). The Institute also collaborates with national manufacturing companies on technological development and production of solar water collectors and solar water heating systems aimed at both the local market and export.

Research aimed at identifying the causes and impacts of pollution events, including research on air and water pollution and its effects on health, on climate change and heat wave impacts on human health, and on mapping of waterborne diseases, is conducted by the Scientific and Research Hydrometeorological Institute of Uzhydromet. The Institute also carries out research on agro-meteorology, notably on soil conditions in pasture lands and on how climate and vegetation type influence evapotranspiration. Hydrometeorological adaptation measures were also the focus of research activities that resulted in the production of maps/atlas for the Ministry of Emergencies.

Research on industrial emissions reduction, on prevention of surface and groundwater pollution, on waste management and wastewater treatment, and on its applications in industry (including the mining industry) is conducted by the Scientific and Research Institute on Environment and Nature Protection Technologies under SCEEP. The Institute was established in 2017 on the basis of another scientific and research institute, founded in 1962. The Institute collaborates with industrial enterprises on specific research projects. It also carries out research on the prevention of soil salinization. In 2018, the Institute was assigned additional functions geared towards research on technologies decreasing the pressures on biodiversity and its structure was enhanced with the establishment of air, water and soil protection laboratories (2018 Resolution of the Cabinet of Ministers No. 958). In general, the Institute struggles with a lack of funding for applied research in the field of pollution prevention and control technologies, which are not produced in the country and have to be imported.

#### **4.5 Legal, policy and institutional framework**

##### *Legal framework*

In 2019, Uzbekistan updated the legal framework for environmental monitoring in the country. The new Regulation on Environmental Monitoring (2019 Resolution of the Cabinet of Ministers No. 737) was approved in September 2019 in place of the old one (2002 Resolution of the Cabinet of Ministers No. 111). The new Regulation covers all domains of

environmental monitoring in much more detail. It includes provisions for:

- The creation of a unified geo-information database of the environmental monitoring system to be developed by CSAC;
- Expansion of the scope of the environmental monitoring system into the domains of flora and fauna monitoring;
- The regulation of environmental monitoring data forms and of data sharing and transfer procedures from ministries and agencies to CSAC;
- Large-scale introduction of automatic air quality monitoring;
- The creation of a publicly available ecological map of Uzbekistan to increase public awareness of the state of the environment.

The 2019 Resolution No. 737 also includes provisions for:

- The improvement of equipment in analytical laboratories;
- Centralized procurement of chemical agents, test gases, precursors and other consumables necessary for the operation of the state environmental monitoring network;
- Progressive installation of automatic monitoring of air emissions at source in enterprises of category I;
- Pursuing accreditation of all national and oblast analytical laboratories under concerned ministries and agencies by 1 January 2021;
- Automation of the air pollution monitoring network using funding from international organizations and donor countries.

The 2018 Resolution of the Cabinet of Ministers No. 970 “On measures to strengthen the material and technical resources of the Centre of Hydrometeorological Service under the Ministry of Emergency Situations of the Republic of Uzbekistan” provides for enhancement of Uzhydromet monitoring equipment. Groundwater monitoring is regulated by the 2014 Resolution of the Cabinet of Ministers No. 119, which approves the Regulation on monitoring of subsoil. Monitoring of sources of environmental pollution by CSAC is detailed in the 2017 Resolution of the Cabinet of Ministers No. 377.

The assessment of concentrations of pollutants is conducted in accordance with standards such as SanPiN No. 0191-05 (on soil), SanPiN No. 0293-11 (on air), O’zDSt 950:2011 (on drinking water) and SanPiN No. 0318-15 (on water bodies).

There is subsidiary legislation detailing the

development and maintenance of the State Water Cadastre (1998 Resolution of the Cabinet of Ministers No. 11), State Cadastre of Flora and State Cadastre of Fauna (2018 Resolution of the Cabinet of Ministers No. 914).

#### *Policy framework*

Since 2010, environmental monitoring activities have been conducted according to the programmes of environmental monitoring approved by the Cabinet of Ministers every five years:

- Programme of Environmental Monitoring for the period 2006–2010 (2006 Resolution of the Cabinet of Ministers No. 48);
- Programme of State Environmental Monitoring for the period 2011–2015 (2011 Resolution of the Cabinet of Ministers No. 292);
- Programme of Environmental Monitoring for the period 2016–2020 (2016 Resolution of the Cabinet of Ministers No. 273).

Each programme includes overall environmental monitoring goals and strategies, and mechanisms for their implementation.

In 2011, biodiversity was included for the first time in the programme of environmental monitoring. Nevertheless, the geographical scope of biodiversity monitoring remains limited, mostly to selected PAs (chapter 11).

A programme of state statistical works is approved annually by the Cabinet of Ministers.

Scientific support to environmental protection is addressed in the Concept on Environmental Protection until 2030 (2019 Decree of the President No. 5863).

#### *Sustainable Development Goals and targets relevant to this chapter*

The current stand of Uzbekistan vis-à-vis target 9.5 of the 2030 Agenda for Sustainable Development is described in box 4.2.

#### *Institutional framework*

The overall coordination of state environmental monitoring activities is carried out by SCEEP, which collects monitoring data from all other governmental bodies involved in the implementation of the five-year programme of environmental monitoring. The responsibilities of these government bodies in terms of environmental monitoring and sending data to SCEEP (and other relevant bodies) are defined in the five-year

programme on environmental monitoring. Until recently, the responsibilities of sending data were defined in terms of periodicity but there were no specific deadlines for producing and sharing environmental data. The new Regulation on Environmental Monitoring, approved in September 2019, sets not only the periodicity but also deadlines for sending data and information to CSAC under SCEEP. It also defines deadlines for inclusion of data and information by various bodies in the unified geo-information database of the environmental monitoring system (still to be created). The new Regulation also includes details on the format in which data is to be shared and content of the data. Despite these positive developments in the legal framework, actual improvement in the sharing of data is to a great extent dependent on the creation and efficiency of the unified geo-information database.

In addition to overall coordination of environmental monitoring activities, SCEEP is also responsible for monitoring the sources of pollution (including air emissions, wastewater discharges and soil pollution) and terrestrial ecosystems. It is also responsible for carrying out monitoring of fauna and flora in PAs subordinated to SCEEP in cooperation with the Academy of Sciences.

Uzhydromet under the Cabinet of Ministers is the main state authority monitoring air pollution, surface water quality and soil pollution, as well as background radiation.

In addition to soil pollution monitoring activities

carried out by Uzhydromet and by SCEEP (the latter at the sources of pollution), the State Committee on Land Resources, Geodesy, Cartography and State Cadastre also monitors soil pollution, as well as soil salinity and nutrient content, in all regions of the country on a quarterly basis. The State Committee on Land Resources, Geodesy, Cartography and State Cadastre also monitors the salinity of irrigated lands in the Republic of Karakalpakstan and Kashkadarya, Navoiy, Samarkand, Andijan, Bukhara, Namangan, Surkhandarya, Tashkent and Fergana Oblasts. It also carries out comprehensive monitoring of soil pollution related to the operations of the Tajik Aluminum Company in the northern districts of Surkhandarya Oblast.

SSESS of the Ministry of Health monitors air and soil pollution under the scope of the overall responsibilities of the Ministry of Health on sanitary and hygienic environmental monitoring. It also monitors the pollution of surface waters and water bodies used for drinking water supply and recreation.

The Ministry of Water Management monitors mineralization levels in the main parts of water distribution and drainage networks.

The State Committee on Geology and Mineral Resources is responsible for monitoring groundwater pollution and hazardous geological processes.

The scientific departments of protected areas carry out biodiversity monitoring activities with the support of the Academy of Sciences.

#### Box 4.2: Target 9.5 of the 2030 Agenda for Sustainable Development



**Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation**

**Target: 9.5: Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending**

National target 9.5 has minor differences from the global target. National indicators 9.5.1 and 9.5.2 are identical to the global ones.

In Uzbekistan, domestic expenditure on research and development (R&D) in 2017 accounted for 0.19 per cent of GDP (indicator 9.5.1: Research and development expenditure as a proportion of GDP), varying little since 2010. This is low compared with OECD Member countries, where the average share was 2.37 per cent of GDP in 2017. It is also low compared with the global average: the 2017 Sustainable Development Goals Report by the United Nations indicates that 1.7 per cent of global GDP was devoted to R&D in 2014. It is not possible to identify the impact of R&D on low carbon development and green technology in Uzbekistan.

The number of researchers (in full-time equivalent) per million inhabitants in Uzbekistan was 485 in 2017 (indicator 9.5.2: Researchers (in full-time equivalent) per million inhabitants), compared with 534 in 2010. This is below the world average (1,098 in 2014) and lower than in Europe and Northern America (3,500 in 2014).

Source: State Committee on Statistics (<http://nsdg.stat.uz/goal/12>).



The State Committee on Forestry compiles forest monitoring data from forest management enterprises (leskhozes), which conduct annual seasonal evaluations of forests under their responsibility. It also carries out flora and fauna monitoring on the lands of the state forestry fund and forest hunting grounds.

The Ministry of Innovation Development is responsible for promoting innovation, including on environmental protection. The Ministry approves grants for basic, applied and innovative programmes and projects carried out by scientific, technical and/or research institutes, including grants for research initiatives related to environmental protection.

#### *Participation in international processes*

SCEEP and the State Committee on Statistics regularly participate in the work of the ECE Working Group on Environment Monitoring and Assessment and the ECE Joint Task Force on Environmental Statistics and Indicators.

SCEEP has also been participating in meetings under the scope of the PRTR Protocol, although not on a regular basis. Uzbekistan is not a party to the PRTR Protocol.

## **4.6 Assessment, conclusions and recommendations**

### *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<sub>10</sub> and PM<sub>2.5</sub> 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<sub>10</sub> and PM<sub>2.5</sub> 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/cadastrals, 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

### 5.1 Access to information on environmental matters

#### *Active access*<sup>17</sup>

#### The State Committee on Ecology and Environmental Protection

The brand-new website of the State Committee on Ecology and Environmental Protection (SCEEP) (<http://environment.gov.uz>) is operational as of 2019. It provides public access to information related to the structure and activities of the Committee. The website includes some data, mostly of an educational nature (tables, graphs, pie charts), about biodiversity, waste management, ambient air and the ozone layer. Data related to water resources, land resources and subsoil, soil protection, eco-energy, environmental monitoring, environmental control, environmental assessment and environmental certification is either lacking or of limited content. Open data and other information posted on the website are of limited content.

SCEEP uses a Facebook page to promote its work. Every six months, SCEEP organizes a press conference about its activities.

SCEEP representatives participate in talk shows on TV when environmental protection issues are the topic of debates.

#### Other

On the website of Uzhydromet ([www.meteo.uz](http://www.meteo.uz)), the public can access some data on the weather and climate. Uzhydromet provides a short daily environmental bulletin for Tashkent City that in fact covers only air quality and is available only for the given day. It also provides the monthly average temperature and precipitation for Tashkent, Nukus, Samarkand and Termez Cities. No other information

or data related to the state of the environment are available online.

Uzhydromet regularly holds press conferences to report on its activities. It prepares and publishes information to respond to hard-hitting publications on the Internet regarding environmental pollution, as well as upon the request of media representatives.

The public has the opportunity to access laws and by-laws, including on the environment, on the national online database of legislation (<http://lex.uz>) and on a private website ([www.norma.uz/](http://www.norma.uz/)).

Since 2015, Uzbekistan has developed an open data portal (<https://data.gov.uz/>). It includes information on 18 spheres of governmental activities, including the environment, population and health. As at mid-2019, the portal contains 5,603 data sets provided by 132 organizations, including SCEEP. Other authorities providing data sets on environmental matters include Uzhydromet, the State Committee on Statistics, the State Committee on Industrial Safety and the khokimiyats of Fergana, Jizzakh, Syrdarya and Tashkent Oblasts. The portal's section on the environment is rather limited in content, not structured by topic (e.g. water, air, biodiversity, waste, etc.) and not easy to navigate. Much of the information provided is of limited use (e.g. the total number of licences is provided without information on licensed activities).

As at October 2019, the State Committee on Statistics ([www.stat.uz](http://www.stat.uz)) does not provide environmental statistics online, except for two tables (chapter 4).

#### *Passive access*

Queries from the public are treated according to their type:

- Statements, suggestions and complaints are dealt with within 15 days in accordance with the 2014

<sup>17</sup> Information on environmental matters can be disseminated by governmental authorities to the public (active access) or provided upon request (passive access).

- Law on Appeals of Individuals and Legal Entities; Requests for information requiring additional study or verification and collection of additional documents are dealt with within one month.

Requests for information on environmental matters are received by SCEEP's Unit for Internal Control and Document Management, which distributes the requests to the respective departments and units for response. Requests for information on environmental matters pertaining to the oblasts are forwarded to the respective oblast environmental authorities for response.

In the period 2014–2018, the total number of queries received by SCEEP increased by a factor of 15. It is estimated that, in 2018, requests for information on the state of the environment constituted about 13–15 per cent of the 2,211 queries received. Information on the time taken to provide a response is not available.

In addition to receiving requests in written form (by post or email), SCEEP has a helpline through which it receives about 300 phone calls a year. Most calls are received in spring, summer and autumn and most are related to fishing (in spring) and waste.

Information on environmental matters is provided by SCEEP free of charge, regardless of the format (electronic or hard copy).

SCEEP reports to have never refused to provide information on environmental matters on the basis of having classified it as limited to internal use.

#### *Other sources of information on environmental matters*

Information about the legislation on the environment and environmental management, awareness-raising activities and environmental events is distributed through the websites of the Ecological Movement of Uzbekistan (<http://eco.uz>), Ecoforum of NGOs of Uzbekistan (<http://ecoforum.uz>) and other NGOs, and through their pages on social networks. The “hot line” system of the Ecological Movement of Uzbekistan has been in operation since 2009. During that period, more than 4,000 alerts about violations of environmental standards have been received.

The website “Information Eco-network” (<http://sreda.uz>), operated for over 10 years by an environmental journalist, provides articles related to environmental matters. This resource has a dedicated channel on the Telegram and Facebook platforms, reaching out to the public.

Environmental news is published online in *Gazeta.uz*, *Kun.uz* and *review.uz*, and in the magazines *Ecological Herald* (<http://econews.uz/>), *Economic Review* ([www.review.uz/](http://www.review.uz/)) and others.

TV programmes and shows occasionally include programmes addressing environmental issues (e.g. “Munosabat”, “Karama-Karshi”, “Sharh +”, *Kalampir*, *Tufsilot*, *Reporter*, and *Assalom Uzbekiston*) and there is one weekly programme dedicated to the environment (“Nahori NashtaEKO”).

#### *Challenges to access to information*

Most members of the public interviewed are of the view that information on environmental matters is generally disseminated in a satisfactory manner, meeting the expectations of the public at large, but the quality of information and timeliness of its dissemination remain a challenge.

At the same time, information related to environmental matters that is actually available to the public online or as printed publications is limited. Most of the information posted on websites is laws and by-laws, while information on the work done and results accomplished in the environmental sector is largely lacking on the websites of governmental authorities. The majority of information and statistical data on the environment is not made available online. Information on revenues and expenditures of the Fund for Ecology, Environmental Protection and Waste Management and other environment-related funds is also not available online (chapter 3). Printed publications on the state of the environment are disseminated among governmental institutions only.

It appears that the public at large is satisfied with the current state of affairs because it is not aware of what constitutes information related to environmental matters and what information is collected. Although, in some oblasts (Andijan, Bukhara, Fergana, Khorezm, Namangan, Navoiy and Samarkand), environmental NGOs interact with governmental authorities on environmental protection rather actively and receive environmental information, generally, the public is rather passive and lacks interest in accessing information on environmental matters, which is most probably due to a lack of awareness about its availability, the public's right to it and existing procedures for asking for it. Thus, a big gap exists between the existing opportunity to ask for information and actual demand and interest in doing so in practice.

Members of the public can request SCEEP and its territorial bodies to provide information on

environmental matters and can receive the information that is available, albeit not always in a timely manner. At the same time, some information, such as on fines imposed on specific enterprises for non-compliance with environmental norms, is not provided to the public, even when requested by NGOs.

With the exception of a few active environmental NGOs, the public at large is hesitant to contact national public authorities on environmental matters. In practice, when necessary, members of the public are more inclined to turn to mahalla (self-government bodies) or local authorities (khokimiyats) for information and assistance.

## **5.2 Public participation in decision-making and access to justice on environmental matters**

### *Environmental NGOs*

#### Overall description

Estimates of the number of environmental NGOs in the country vary, most likely due to the application of different definitions of an “environmental NGO” and counting (or not) the branches of the Ecological Movement of Uzbekistan and members of Ecoforum of NGOs of Uzbekistan. The Ministry of Justice reports nine environmental NGOs registered at March 2019, including two associations of environmental NGOs – Ecological Movement of Uzbekistan with 14 branches in all regions and Ecoforum of NGOs of Uzbekistan consisting of 36 environmental NGOs. According to SCEEP, there are 46 environmental NGOs, including 25 NGOs in Tashkent City. An assessment conducted by the Regional Environmental Centre of Central Asia (CAREC) in 2017 reports 92 environmental NGOs in 2016, of which 51 were active.

The most active environmental NGOs include: Ecological Movement of Uzbekistan, Ecoforum of NGOs of Uzbekistan, Foundation for the Protection of the Aral Gene Pool, Ecosan International Foundation, Uzbekistan Society for the Protection of Birds, NGO “Suvchi”, NGO “Union for the Defence of the Aral Sea and Amu Darya”, NGO “Logos”, NGO “Zarafshan”, NGO “For Environmentally Friendly Fergana”, NGO “Rodnichok”, NGO “Salomatlik Plus Environment”, NGO “Jonli Tabiat”, NGO “Ekomaktab”, NGO “Shokhimardonobod Suv”, NGO “Orzu”, NGO “KRASS” and NGO “Eco-Tib”.

Environmental NGOs operate in the areas of ecology and environmental protection, environmental education, environmental journalism, promoting public involvement in environmental activities,

dissemination of environmental information, sustainable development, climate change, development of mountain areas, biodiversity conservation, water use and gender equality in the management of natural resources.

The presence of one large civil society organization – the Ecological Movement of Uzbekistan, with territorial branches in all regions of the country – is a specific feature of public participation in environmental protection in Uzbekistan. This organization has significant support from the State and, since its establishment in 2008, by law, has had a 10 per cent quota of seats in the lower (legislative) chamber of the Parliament of Uzbekistan (Oliy Majlis). The activities of the Ecological Movement and its territorial branches undoubtedly make a significant contribution to mobilizing the public in the country to solve environmental problems, improve legislation in the field of environmental protection and public health, implement public environmental control, increase public awareness and create an ecological culture among the population. The Ecological Movement is also very active in the international arena. The presence of such an organization is convenient for governmental authorities, since it provides the framework for organized operation of the environmentally minded public. However, the work of the Ecological Movement alone cannot ensure broad public participation in the form in which it is envisaged by current generally accepted international practice.

The system that has been in force since 2008, under which the Ecological Movement of Uzbekistan was allocated 15 of the 150 seats in the Oliy Majlis, and the Chairperson of the Ecological Movement served as Deputy Speaker of the Legislative Chamber, was abolished in the light of the ongoing reforms in Uzbekistan with the adoption of the Electoral Code in 2019. In January 2019, the representatives of the Ecological Movement established a political party called the Ecological Party of Uzbekistan.

#### Registration

Since 2018, the procedure of registering an NGO has been simplified and, as of 1 January 2019, is done by electronic means. At least 10 members are needed to form an NGO. A period of one month is set for registering an NGO, instead of the previous two months. Notarization of constituent documents during registration is no longer required.

The state duty for NGO registration was reduced by a factor of five. Registration of an NGO at the national and inter-oblast level costs four minimum wages,

about US\$98 at March 2019. Registering an NGO at the local level costs two minimum wages, some US\$49 at March 2019. Registering branches of an NGO is free of charge. It costs 12.5 minimum wages to register an international NGO. It is envisaged to reduce the state duty for NGO registration at the national, inter-oblast and local levels, starting from January 2020.

In the past few years, no new environmental NGO has been registered at the national and inter-oblast levels. The CAREC branch in Tashkent City is the only international environmental NGO registered in the country.

### Operation

Since 2014, any NGOs that are not engaged in financial and economic activities for over six months are no longer closed down (2013 Resolution of the President No. 2085).

Since 2018, the procedures for operation of environmental NGOs have been simplified and are less bureaucratic. The oversight of the activities of NGOs has been also simplified since 2018. The events organized by NGOs no longer require approval by the Ministry of Justice; instead, the Ministry is notified of such events. For events organized in Uzbekistan, the deadline for notification was shortened to 10 days before the event, compared with 20 days previously, when approval was required.

When events are organized abroad or international experts participate in events organized in the country, the Ministry of Justice is to be notified 20 days in advance of the event, compared with one month previously, when approval was required.

The rate of the unified social payment related to NGOs' financial resources from sponsorship and membership fees was reduced in 2018 from 25 per cent to 15 per cent. When international funds are used to organize events or support NGOs' activities, approval by the Ministry of Justice is required. NGOs have to obtain permission to receive funds from foreign grants into special accounts opened in any bank. In practice, such approval was granted in 2018 to CAREC only. As at March 2019, there are no other cases of NGOs organizing events with foreign funds.

A number of reforms and measures have been initiated as a follow-up to the 2018 Decree of the President No. 5430 "On measures to fundamentally enhance the role of civil society institutions in the process of democratic renewal of the country". For instance, pensions are now paid to retired employees of NGOs.

For some activities and events, such as meetings of NGOs' governing bodies or activities conducted upon decisions by the Oliy Majlis, the President, the Cabinet of Ministers and the local authorities and based on state programmes and national plans, an abbreviated form of notifying the Ministry of Justice three days before the event is applied. Such notification format and deadline also apply for activities conducted within the state grants and state social procurement.

The procedure for reporting on activities by NGOs was also simplified. Since 2018, NGOs report on their work to the Ministry of Justice and the State Committee on Statistics only once a year by submitting an annual report. They also report quarterly to the tax authority. The format for reporting to the Ministry of Justice was made simpler by merging the previous three reporting forms into one and decreasing the number of questions. Since January 2019, the annual reporting to the Ministry of Justice is done electronically.

The procedure for monitoring and studying NGO activities by judicial authorities was established in August 2018. The decision to carry out an NGO study is required to be issued no less than 10 days before the commencement of the procedure of NGO study and the NGO head is to be notified on the same day. The duration of the NGO study is up to 30 days, with a possible extension for another 30 days.

Since 2008, a Public Fund to Support NGOs and Other Civil Society Institutions under the Oliy Majlis issues calls for grant proposals and social service procurement for NGOs.

SCEEP provides grants for NGOs from the Fund for Ecology, Environmental Protection and Waste Management. The Fund's Board comprises 14 members, including one from an environmental NGO.

Grant programmes for NGOs are also announced by the GEF Small Grants Programme. The GEF Small Grants Programme Committee in Uzbekistan includes a representative of an environmental NGO.

NGO Houses are being established in Tashkent City, the Republic of Karakalpakstan and at oblast level in accordance with the 2018 Decree of the President No. 5430. The idea behind this is to provide premises with zero rental for new NGOs and for NGOs operating in the areas of social importance. For instance, in Urgench City, such a house was opened in September 2018, hosting 19 NGOs rent free, including the local branch of the Ecological Movement of Uzbekistan. The initiative envisages using unused state-owned buildings to accommodate NGOs rent free; however,



NGOs are reluctant to move into such premises, which are often in a poor state.

#### *Procedures and tools for public participation in decision-making*

The public at large and NGO representatives are poorly engaged in decision-making on environmental matters. Detailed procedures to ensure and enable effective public participation in decision-making on environmental matters, including on projects, activities, strategic documents and legislation, are lacking. It is mostly NGOs that work closely with the environmental authorities that are invited to participate in consultation processes. For example, the Ecological Movement of Uzbekistan was engaged in setting quotas for hunting and fishing by participating in a relevant interdepartmental commission. Governmental authorities do not assign human and financial resources specifically for promoting public participation and monitoring this area.

#### Public councils

Public authorities began to consider how to involve civil society in decision-making in order to implement the 2018 Decree of the President No. 5430. They began to establish public councils as advisory bodies under governmental institutions. However, public councils cannot provide the opportunity for all interested representatives of the public and NGOs to participate in decision-making on environmental matters.

The Public Council under SCEEP was established in July 2018. As at March 2019, the Public Council, chaired by a representative of academia, is composed of 18 members, including one representative of environmental NGOs and one environmental journalist. Between July 2018 and February 2019, the Public Council held four meetings. Minutes of meetings and other information about the work of the Public Council are not available online. SCEEP lacks the capacity to service the work of the Public Council properly. A public council was established in 2011 under the then State Committee for Nature Protection, but no information on its activities is publicly available.

A public council was established in 2018 under the Tashkent City Khokimiyat, because of the public outcry about tree felling. The council established 14 thematic commissions, including one on the environment and sustainable development. The council focuses its work on matters of the highest concern for citizens, such as the cutting down of trees, the state of sidewalks and streets, lighting and road

safety. SCEEP participates in meetings and provides information to this public council, as requested.

#### Ecological expertise

The public has the opportunity to initiate public ecological expertise. In practice, public ecological expertise is not conducted, mainly due to the financial implications but also because of the advisory nature of its conclusions (chapter 2).

Also, when public hearings are organized as part of the EIA process, the public concerned has the right to participate; however, in practice, the information about public hearings is not disseminated adequately, resulting in the eventual participation of representatives of environmental NGOs who have been invited personally, e.g. by phone. Sometimes, such hearings are not organized at all. Documents and materials for the public hearings are not made available to the public in advance. Overall, as at early 2019, public participation in EIA is under development, requiring the establishment of clear procedures aligned with international practices (chapter 2).

#### Public environmental control

Individuals, local self-government bodies and environmental NGOs can conduct public environmental control in line with the provisions of the 2013 Law on Environmental Control. In 2018, SCEEP, in cooperation with the Ecological Movement of Uzbekistan and with support from local khokimiyats and makhallas, trained thousands of NGO and makhalla representatives, who received training certificates and identity cards as public inspectors of environmental control. The training prepared public inspectors to conduct inspection activities and submit their outcomes to the district (town) inspectorates in the field of ecology and environmental protection for consideration and action. Data on the activities of public environmental inspectors are not analysed (chapter 2).

Hearing information from and reports of senior managers is one of the forms of public environmental control. The Ecological Movement of Uzbekistan organizes public hearings of information provided by senior managers of enterprises, organizations and oblast departments on ecology and environmental protection. Such hearings conclude with the adoption of recommendations that are then transmitted to governmental authorities, enterprises and other organizations.

### Strategic planning and legislation

Since 2018, draft laws and by-laws (including those that approve strategic documents) are made available online on a dedicated website (<https://regulation.gov.uz>). Members of the public can use their existing accounts on social platforms to post comments. The period available for commenting is 16 days.

Of the 12 draft documents posted by SCEEP from December 2018 to April 2019 for comments, despite their being viewed over 1,000 times, only one document received two comments, both made by the same person. The draft concept on environmental protection until 2030, placed for comments in June 2019, received no comments. The low participation could be attributed to the lack of expertise in the topics covered by the documents and a cautious attitude to openly providing comments. In addition, the timeframe of 16 days is too short to mobilize the public.

### Petitions

Citizens of Uzbekistan can initiate online petitions, including on environmental matters, through a dedicated web portal ([meningfikrim.uz](http://meningfikrim.uz)), in order to urge national and subnational authorities to initiate legislative reforms. In the environmental area, there have been two examples of using this instrument.

In 2018, a petition called for reform of the system of tree protection in cities and villages. It garnered 12,565 votes and was considered by the Legislative Chamber of the Oliy Majlis, which took a number of decisions requiring action, mostly by SCEEP.

Another petition referred to measures to prevent cruelty to animals. Having gathered 10,651 votes, it was considered in 2019 by the Legislative Chamber, which approved several decisions requiring action, mostly by SCEEP.

### Social media

Members of the public are active on social media platforms (e.g. Telegram, Facebook), where they actively discuss issues that affect the life of the urban population, e.g. the cutting down of chinar trees in Tashkent and other cities, demolition of residential buildings in the territories allocated for the construction of enterprises or multi-storey buildings, or infill development.

### Public participation in international forums

Representatives of the Ecological Movement of Uzbekistan are regularly included in national delegations participating in international meetings and events. This is not the case for other environmental NGOs.

NGO representatives actively participate in international meetings and events but not as part of national delegations.

Members of the public and representatives of environmental NGOs, except for the Ecological Movement of Uzbekistan, are not involved in the decision-making process about participation of the country in new multilateral environmental agreements (MEAs).

### *Environmental defenders*

The issue of environmental defenders being able to operate in safety, including questions surrounding their possible persecution, is generally not spoken of. Persecution is neither confirmed nor denied. Reportedly, at least one case of intimidation of environmental defenders by governmental authorities occurred during the period 2012–2017, leading to discontinuation of the activities of the NGO involved.

### *Access to justice*

In accordance with the legislation, members of the public can challenge decisions, acts and omissions of the public authorities and developers/operators related to environmental matters before the higher public authorities, the Human Rights Ombudsperson and in the courts.

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

Generally, the public at large is not aware of the possibility of appealing to the courts on issues related to environmental matters, and those who are aware are reluctant to do so.

There are no special environmental courts in Uzbekistan. Cases related to environmental protection are to be considered as part of criminal, administrative, economic and civil judicial procedure.

Individuals are exempted from payment of state duty in civil and administrative courts when challenging the actions of governmental officials. NGOs are exempted from payment of state duty in civil and administrative

courts when challenging the decisions of state bodies or actions of governmental officials that violate their rights and legitimate interests. In practice, there are no examples of such cases.

The Human Rights Ombudsperson has functioned in Uzbekistan since the mid-1990s. In 2015, the Human Rights Ombudsperson received 255 environmental-rights-related complaints (out of a total 12,373 complaints). Activity reports after 2015 are not publicly available. There is no other independent body to which the public could turn for advice regarding their environmental rights.

### **5.3 Legal, policy and institutional framework on access to information and public participation**

#### *Legal framework*

The 1992 Law on Nature Protection stipulates that residents of Uzbekistan have the right to unite in public organizations for the protection of nature, and to request and receive information about the state of the environment and measures taken to protect it. Furthermore, the Law declares open access to information on the state of the environment and requires publication of its main indicators by state bodies on ecology and environmental protection. These provisions do not seem to be fully implemented as at March 2019. Also, 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.

The 1997 Law on Guarantees and Freedom of Access to Information and the 2002 Law on Principles and Guarantees of Freedom of Information regulate the procedures and deadlines for public authorities to provide information to the public.

The 2014 Law on Openness of Activity of Public Authorities and Administration regulates dissemination of information by governmental authorities about their activities and passive access to information about the activities of governmental bodies.

The 2018 Law on Public Control regulates public control by citizens, self-government bodies, NGOs and the media on activities of state bodies. Public control includes sending queries and requests to state bodies, participation in open collegial meetings of governmental bodies, public discussion, public hearing, public monitoring, public expertise, the study of public opinion and hearings of reports and information from government officials, including on environmental issues.

The 2014 Law on Social Partnership regulates the interaction of state bodies with NGOs and other civil society institutions in the development and implementation of programmes of social and economic development of the country, and of legal acts and other decisions affecting the rights and legitimate interests of citizens, including in the area of environmental protection and public health.

The 2013 Law on Environmental Control governs certain aspects of access to environmental information and public (citizens, self-government bodies and NGOs) participation in decision-making on environmental issues, including through public environmental control and the establishment of a system of public inspectors of environmental control.

The legislation in the area of access to information and public participation is rapidly developing with new acts of subsidiary legislation recently adopted, such as the: 2013 Resolution of the President No. 2085 “On Additional Measures to Assist the Development of Civil Society Institutions”; 2015 Resolution of the Cabinet of Ministers No. 232 “On measures to further improve the governmental portal of Uzbekistan on the Internet, taking into account the provision of open data”; 2018 Resolution of the Cabinet of Ministers No. 125 “On measures for further improvement of activities of information services of the state authorities and administration”; 2018 Resolution of the President No. 3837 “On measures to organize the activities of public councils under state bodies”; 2018 Decree of the President No. 5430 “On measures to fundamentally enhance the role of civil society institutions in the process of democratic renewal of the country”; and 2019 Resolution of the President No. 4273 “On additional measures to ensure openness and transparency of public administration, as well as increase the country’s statistical potential”.

The main legal framework regulating the activities of NGOs is still largely based on old, outdated laws and by-laws, such as the 1991 Law on Public Associations in Uzbekistan, 1999 Law on Non-State Non-Profit Organizations, 2007 Law on Guarantees of Activity of Non-State Non-profit Organizations, 2005 Resolution of the President No. 107 “On measures to assist the development of civil society institutions in Uzbekistan” and the 2008 Joint Resolution of the Legislative Chamber and the Senate of the Oliy Majlis No. 842-I “On measures to strengthen support for NGOs and other civil society institutions”.

Often, detailed specifications, procedures and guidance are lacking for the effective implementation of public participation. Governmental institutions struggle to implement new legislation and procedures

because they lack adequate capacity and expertise and have no tradition in the area of access to information, public participation and access to justice in environmental matters.

#### *Policy framework*

There is no specific strategic document on access to information, public participation and access to justice in environmental matters. The Concept on Environmental Protection until 2030 (2019 Decree of the President No. 5863) underlines the need to establish an effective mechanism for mandatory public participation in environmental decision-making and covers some aspects of access to information on the environment.

The Action Strategy on Five Priority Directions for Development for the period 2017–2021 provides for the development of civil society, increased dialogue with the population, promoting the rule of law and reforming the judicial system. These activities should normally lead to increased access to information and public participation.

#### Sustainable Development Goals and targets relevant to this section

The current status of Uzbekistan vis-à-vis selected targets of Sustainable Development Goal 16 of the 2030 Agenda for Sustainable Development is described in box 5.1.



#### **Box 5.1: Selected targets under Goal 16 of the 2030 Agenda for Sustainable Development**

##### **Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**

Implementation of the environmental dimension of Goal 16 in Uzbekistan is at the inception phase. Legal provisions are being put into place to promote effective governance. However, implementation on the ground is lagging behind. Due to a general absence of tradition and experience in this area, without concerted efforts from all governmental authorities and institutions working on environmental protection and in the areas that have an impact on the environment, the country will not be able to achieve the environmental dimension of Goal 16 by 2030. During the nationalization of Goal 16's internationally adopted targets and indicators, many global targets and indicators incurred modification, often resulting in a narrower scope.

##### **Target 16.6: Develop effective, accountable and transparent institutions at all levels**

The global target was adopted at national level in modified wording, aiming to “Increase effectiveness, accountability and transparency of government institutions at all levels”, with two national indicators that are identical to the global ones (16.6.1, Primary government expenditures as a proportion of original approved budget, by sector (or by budget codes or similar) and 16.6.2, Proportion of population satisfied with their last experience of public services).

Uzbekistan has started action to make its institutions, including those working on the environment or on activities with impact on the environment, more effective, accountable and transparent.

SCEEP operates a new website that is attempting to increase the transparency of its activities. Further steps in the field of accountability could include making available online financial information related to the activities of the Fund for Ecology, Environmental Protection and Waste Management. To increase its effectiveness, SCEEP could look into establishing effective measures to enhance the implementation of planned activities and the quality of results achieved.

To increase transparency, Uzbekistan operates an open data portal (<https://data.gov.uz/>) that includes information in the environmental field. However, the current approach to organizing this data needs to be revisited to make it useful for the public.

Moreover, the country has an open budget website (<https://openbudget.uz/#/budget>) on which aggregated information on state budget expenditures are posted for eight categories of expenditure, including for environmental protection. However, these data are not helpful as they do not provide any details, only showing exactly the same aggregated data for planned and incurred expenditures on environmental protection for each of the four years 2016–2019, where incurred expenditures are 3.9 times bigger than the planned expenditures in each of the four years.

To assess public satisfaction with the public services provided by SCEEP, as well as by other institutions in possession of information on environmental matters or overseeing activities that have an environmental and human health impact, specific surveys could be conducted on a regular basis with a view to improving these services.

Practical implementation of target 16.6 remains a challenge and it would require considerable effort to achieve the target by 2030. Developing an institutional tradition and knowledge, enhancing capacity and allocating adequate financial support are prerequisites for making achievement of this target a reality.



**Target 16.7: Ensure responsive, inclusive, participatory and representative decision-making at all levels**

Uzbekistan's national target 16.7 is to "Increase the participation of citizens, business entities and civil society institutions in the process of preparing and making decisions at all levels of government". The first of the two global indicators (16.7.1) was nationalized by Uzbekistan in a simplified version and the second (16.7.2) was adopted with its internationally agreed wording.

Concerning participation in decision-making on environmental matters, a positive development is the re-establishment of a Public Council under SCEEP in July 2018 to serve as a platform for engaging representatives of the public in decision-making; however, the Public Council alone cannot ensure responsive, inclusive, participatory and representative decision-making on environmental matters at all levels.

Since 2018, the public can participate in the development of legislation by commenting on draft laws and by-laws online; however, thus far, the public does not participate actively in commenting on environment-related draft legislative documents.

The two 2018 Presidential Decrees on measures to organize the public councils and to fundamentally enhance the role of civil society institutions would support the development of public participation in environmental matters, provided they are effectively put into practice.

Uzbekistan can achieve the environmental dimension of the national target by 2030 by increasing the participation of citizens, business entities and civil society institutions in environmental decision-making by going beyond the mechanism of public councils and establishing adequate procedures enabling effective public participation. Specific efforts are to be made to cultivate the in-house expertise in SCEEP and other governmental authorities and to raise awareness and develop the capacity of the public and environmental NGOs, with a view to ensuring their engagement and participation in environmental decision-making at all levels and in all relevant sectors.

**Target 16.10: Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements**

Global target 16.10 was nationalized with different wording, i.e. to "Increase the information openness of the state bodies and administration for the realization of the right of citizens to information and to ensure the protection of fundamental freedoms of citizens". The target, as adapted nationally, does not include the dimension of ensuring public access, limiting it to increasing the openness of information. Concerning access to information on environmental matters, based on the current limited availability of such information to the public (mostly, just the legal framework is available), without adequate measures and additional efforts, progress on this target would be difficult to achieve.

Global indicator 16.10.1, "Number of verified cases of killing, kidnapping, enforced disappearance, arbitrary detention and torture of journalists, associated media personnel, trade unionists and human rights advocates in the previous 12 months", was dropped altogether by Uzbekistan. While there are no officially recorded cases of persecution of environmental defenders in Uzbekistan, reportedly, cases of intimidation occur.

The second global indicator, 16.10.2, "Number of countries that adopt and implement constitutional, statutory and/or policy guarantees for public access to information", was modified by Uzbekistan to "List of legal acts providing guarantees of citizens' access to information", thereby losing the implementation dimension.

Uzbekistan adopted the Law on Guarantees and Freedom of Access to Information in 1997 and the Law on Principles and Guarantees of Freedom to Information in 2002. In addition, the 1992 Law on Nature Protection provides for the right to have access to information about the state of the environment and to the measures taken to protect it. 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.

While several laws on access to information are adopted, allowing the country to consider national target 16.10 as already achieved, their implementation into practice remains a challenge.

*Institutional framework*

SCEEP's Unit for Public Relations and Mass Media, established in 2017, has two staff; one of these posts is vacant as at March 2019. This Unit is considered responsible for access to information and public participation in decision-making on environmental matters; for these purposes, its staff capacity is not sufficient.

SCEEP's Unit for Internal Control and Document

Management, established in 2014, is in charge of managing queries and requests for information received by the Committee. It has five staff as at March 2019.

In addition, there are 14 specialists in the territorial departments for ecology and environmental protection who are responsible for providing information on environmental matters to the public.

The General Prosecutor's Office carries out activities

to improve the population's understanding of legal matters. More than 2,000 events to raise public awareness of environmental protection and the requirements of environmental legislation have been organized from 2016 to early 2019.

*Participation in international agreements and processes*

Uzbekistan is not a party to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention), which provides the highest international standards in these three areas. The country does not benefit from the capacity-building and policy development activities undertaken under the Convention and the experience of other countries that are parties to the Convention. Since 2018, the Government has renewed its cooperation with ECE on matters related to public participation to enhance its knowledge of the international standards provided through the Aarhus Convention, the Espoo Convention and its Protocol on SEA, and other countries' experience in implementing these treaties.

Governmental authorities are engaged in the implementation of several projects conducted by the office of the Organization for Security and Co-operation in Europe (OSCE) Project Coordinator in Uzbekistan that aim to enhance access to information and public participation and promote good governance. In 2016, on the premises of Namangan Territorial Branch of the Ecological Movement of Uzbekistan, and in 2018, at the Tashkent Territorial Branch of the Ecological Movement, projects have been implemented with the assistance of the Office of the OSCE Project Coordinator in Uzbekistan to establish information resource centres to facilitate public dissemination of environmental information. Many projects supported by OSCE include activities related to promoting and improving access to information, public participation and access to justice in environmental matters.

#### **5.4 Environmental education and education for sustainable development**

In 2017, young people aged up to 16 years constituted 30.2 per cent of Uzbekistan's population and those aged from 16 to 24 years constituted 15.8 per cent. Thus, nearly half the population (46 per cent) is potentially engaged in the education system at various levels.

There is no gender imbalance in enrolment at the primary and secondary school levels, where the female to male ratio was close to 1.0 in 2017. However, in

higher education there are lower female than male enrolment levels. In 2017, the ratio of female to male enrolment was 0.67.

*Integration of environmental education and education for sustainable development (ESD) into curricula*

#### Preschool education

As at 2019, preschool education provided for 3- to 7-year-old children is not compulsory in Uzbekistan. Since December 2018, mandatory free-of-charge preschool education for 6- to 7-year-olds, preparing them for school, is being piloted in eight districts and three cities in the Republic of Karakalpakstan, Fergana Oblast and Tashkent City. Full coverage of all 6- to 7-year-olds in the country is expected by 2021 (in 2018, 44.9 per cent of 6-year-olds were enrolled in preschool education).

Following the adoption in 2018 of the State Programme for Pre-school Educational Institutions "Ilk Kadam" (First Step), developed with support from the United Nations Children's Fund (UNICEF), environmental education is carried out during classes called "Acquaintance with the World Around Us", "Experiments – Science" and "Acquaintance with Nature". Each year, 36 classes are held on the first two themes jointly and 36 classes on the third theme, for 3- to 4-year-olds and 4- to 5-year-olds. Five- to 6-year-olds and 6- to 7-year-olds receive 72 classes dedicated to the first two themes and 36 classes to the third theme. The teaching methodology includes role playing, games and excursions in the natural environment. Each preschool education institution maintains a "natural history corner", involving children in taking care of the plants.

Preschool education focuses on environmental education. While some ESD elements related to the environmental dimension (such as developing competences to demonstrate respect for the environment, and to understand the role of human beings in transforming the world, as well as classes to learn about nature, develop awareness of the importance of nature in people's lives and the need to protect the planet) are included in the new State Programme "Ilk Kadam", ESD as an approach is not integrated into the preschool education system.

#### Primary school education

Primary education is compulsory for 6- to 7-year-old to 9- to 10-year-old children.

Environmental education takes place during study of

the subject “The World Around Us” for 1st and 2nd grade children and “Nature Study” and “Ethics” for 3rd and 4th graders.

The children’s encyclopaedia “Olam Khakida bir Olam Malamot” (“A World of Information about the Universe”), developed in 2008 and used by preschool and primary school children, provides information about the world around us, and the weather, climate and biodiversity of Uzbekistan.

Primary school education contains environmental education, while ESD is not integrated into primary education.

#### Secondary school education

Secondary school education is compulsory. In 2014–2015 the curriculum was revised and during the period 2016–2018 teachers underwent training on the revised curriculum, which is being gradually introduced into secondary education.

Environmental education is included in curricula for students of grades 5–11 across various subjects, integrating information on conservation and respect for nature and its resources, and issues related to climate change. These issues are mostly addressed in the lessons on Botany, Zoology, Biology, Geography, Chemistry, Physics, and “Man and Human Health”. In 11th grade, students receive 20 hours of Ecology studies. In addition, environmental issues are considered in the lessons on History, Literature, Russian and foreign languages. Issues related to climate change and human influence on nature are also studied in extracurricular activities, excursions and hikes in the natural environment. About two hours per academic year during the weekly classroom hour are dedicated exclusively to environmental education.

Environmental themes are also addressed in other discussions during the classroom hour (box 5.2).

Based on activities to organize “eco-groups” in secondary schools Nos. 37, 50 and 53 of Shakhrikhan District of Andijan Oblast, a methodological manual titled “Ecologic Tarbiya va Soglom Bola” (“Environmental Education and the Healthy Child”) was developed in 2014.

In addition, activities are carried out to promote the “Climate Box” manual (a set of educational game materials for school children on climate change) in institutions involved in general secondary education. Based on these materials, “open lessons” and other events dedicated to climate change are held in a number of schools in the city of Tashkent.

A few other themes of sustainable development, such as issues related to gender equality, human rights, children’s rights, local knowledge and traditions are studied during History (grades 5–11) and State and Law Fundamentals (grades 10–11) classes.

Environmental education is well addressed in secondary school education. ESD is in its inception, addressing a few themes, mostly during classroom hours.

#### Secondary specialized education and vocational training

Secondary specialized education and vocational training are provided in academic lyceums and professional colleges. Both offer three-year education programmes. Academic lyceums offer in-depth professionally oriented learning, while professional colleges allow students to obtain one or more specializations in selected professions.

#### **Box 5.2 Environmental education in selected Tashkent and Samarkand secondary schools**

Tashkent School No. 60 – a public secondary school specializing in the German language – organizes a day of ecology every year and dedicates approximately 25 per cent of discussions during classroom hours to environmental themes. Besides teaching about the environment in Biology, Chemistry, Geography and Physics, the school integrates environmental issues across other subjects and, in particular, in studying the German language. Also, during technology classes, children make handcrafts from natural and waste materials. The school runs an eco-club of 15 members, which meets every month. The concept of separate waste collection and recycling is promoted; however, actual recycling is not done due to the lack of infrastructure in the country to separately collect and process the waste. Teachers undergo a month-long in-service training course every three years, 30 per cent of which is dedicated to environmental education.

Samarkand School No. 33 – a public secondary school – has an environmental group of 15 members (6th to 7th graders), which meets twice a week. The school organizes events and exhibitions dedicated to environmental awareness-raising and protection. School children engage in voluntary commitments, including to protect the environment by saving water and energy and reducing waste at school and at home. To gain practical experience on environmental issues, the school organizes excursions in the natural environment and visits to greenhouses, a paper production factory, the Samarkand Agricultural Institute and the Faculty of Biology of Samarkand State University. Each year, three classroom hours are focused on environmental themes. Parents are involved along with children and teachers in various competitions organized by the school and in preparing handcrafts from natural products and waste.



**Photo 5.1: “Nature garden”, Tashkent School No. 60**

*Photo credit: Ms. Angela Sochirca*

Environmental education is included in secondary specialized education and vocational training as part of the general education subjects. Colleges and academic lyceums have 16 hours of ecology studies. ESD is not integrated into secondary specialized education and vocational training.

#### Higher education

As at March 2019, higher education is provided by 98 universities, including 14 foreign university branches. Many universities have faculties of biology, geography, chemistry and ecology that prepare specialists related to the environmental sector. Every year, about 320 environmental specialists are trained in the country's higher education institutions. Educational and industrial internships and the preparation of final theses often take place at SCEEP.

ESD is addressed by some of the universities, mainly within research- and project-based activities. There is no separate faculty or department on ESD, nor is there a bachelor's or master's degree in ESD. Environmental education, on the contrary, is

compulsory in all higher education institutions as part of the general studies for all specialities, which includes the subject of Ecology. However, as at March 2019, it is feared that this subject may be removed from compulsory subjects for certain specialities to make space for other subjects.

At the National University of Uzbekistan named after Mirzo Ulugbek (NUU), the Department of Applied Ecology and Sustainable Development has been working for over 10 years on the adaptation of ESD to the national needs of Uzbekistan and on ESD promotion and training for teachers. In 2015, a National Training Centre on ESD was established within NUU as part of project-based activities. Several materials for teachers were produced and workshops were organized on ESD, including as a contribution to achieving target 4.7 of the Sustainable Development Goals. Activities included a seminar for managers of NUU (in 2017), three workshops for teachers and methodologists of NUU on the integration of sustainable development, Sustainable Development Goals and global citizenship education into NUU curricula and programmes (in 2018), and several



seminars and open lectures for NUU students (during the period 2016–2018). NUU developed a draft roadmap for introducing principles of ESD and global citizenship into all forms and levels of the education system in Uzbekistan. However, in the absence of political support from the Government, as well as the lack of clear mandates on ESD and a working institutional mechanism on ESD, there is no clarity on how the roadmap could be considered for implementation.

The main university preparing environmental specialists is Tashkent State Technical University (TSTU) named after Islam Karimov. The TSTU Department of Ecology and Environmental Protection has about 40–45 students each year joining the four-year bachelor's course. About 5–10 per cent of students continue with the two-year master's degree, and some continue with doctoral and post-doctoral studies. In 2018/2019, six master's students were studying topics connected with solid and liquid waste

and air pollution. SCEEP, through its Scientific and Research Institute on Environment and Nature Protection Technologies, supports the master's programme by providing a supervisor for each master's student. Some faculty staff work at the Institute. The Department conducts research jointly with the Institute. It also cooperates with other scientific and research institutes under the Academy of Science and with business, for example, the SUE Uzbekneftegaz.

Tashkent University of Law includes a Department of Environmental and Agrarian Law. The Department carries out educational, methodological and research work on environmental law, agrarian law, land law and energy law.

#### *Training of teachers*

Teachers with bachelor's and master's degrees are prepared by universities and pedagogical institutes.

**Photo 5.2: Exhibition dedicated to environmental protection at Samarkand School No. 33**



*Photo credit: Ms. Angela Sochirca*

The Tashkent State Pedagogical University (TSPU) named after Nizami prepares future educators and teachers in 26 orientations for preschool, primary and secondary schools and vocational education. The TSPU master's degree includes 30 specialist fields of study. Future preschool educators study theory and methodology of familiarization with nature for a total of 354 hours, including 80 hours of practical and 160 hours of self-guided study. Future secondary school teachers study the subject Ecology and Nature Protection (58 hours, including 22 hours of practical and 20 hours of self-guided study). TSPU runs a club called "Tree of Life", which has 22 members.

The Urgench State University, which prepares educators and teachers, benefited in March–April 2018 from several training sessions on environmental education, ESD, sustainable development, Sustainable Development Goals and global citizenship education provided by the NUU Department of Applied Ecology and Sustainable Development. With support from NGO "KRASS" (Urgench), training modules on sustainable development were prepared and training sessions were organized to promote the principles of ESD and sustainable development in the Aral Sea region (Khorezm Oblast and the Republic of Karakalpakstan). In 2011, a UNESCO Chair (department) on ESD was established as part of project activities to enhance the capacity and skills of educators at the university, lyceum and school levels. The Chair on ESD operated in the framework of project-based activities until 2014; in 2016, it was renewed for three years, until February 2019. However, without the political support of the Ministry of Higher and Secondary Specialized Education to formally recognize the Chair on ESD, reporting on the progress achieved and a request to UNESCO for another extension is pending. Thus, as at February 2019, the Chair on ESD is no longer operational.

ESD is not included in the preparation of future educators and teachers during their bachelor's and master's degree studies, as at March 2019.

In-service training of educators for preschool education, done by the Institute of Retraining and Advanced Training of Managers and Specialists of Pre-school Educational Institutions since June 2018, includes a four-hour training module on Life Safety related to environmental education. In 2018, 2,434 preschool education managers and educators engaged in in-service training. In addition, in 2018–2019, workshops for preschool educators are being organized at the local level to train the educators about the substance and educational approaches of the new State Programme "Ilk Kadam". No other special

training is organized on environmental education or ESD.

For general education school teachers of core subjects and areas, including Biology, Geography and Chemistry, regional centres for advanced training and retraining of the public education system at universities hold one-month training courses every five years. The course of 144 hours, comprised of thematic sections, includes materials on ecology and environmental protection. The theme of gender equality was integrated into the programme of retraining of teachers. ESD as an approach is not included in the regular in-service training of teachers.

Scientific and academic studies are conducted by teachers of secondary schools in the City of Tashkent and Andijan Oblast to promote and introduce environmental education and ESD.

Ecoforum of NGOs of Uzbekistan is closely cooperating with schools in the framework of project-based activities and supporting the training of teachers on environmental education. Ecoforum is conducting training for teachers, including on issues of sustainable development and sustainable lifestyle, and facilitating the development of educational and methodological guidance and manuals on environmental education. Several of these materials, such as the teaching guide on Ecology for teachers and the textbooks and practice books on Ecology for grades 1–4 pupils and methodological manual for the textbooks include notions of sustainable development (for 4th graders) and have been approved and recommended for publication by the Republican Education Centre under the Ministry of Public Education.

#### *Non-formal and informal education*

SCEEP is raising awareness on environmental issues by organizing various events. In January 2017, SCEEP hosted a round table on sustainable development for the universities of Uzbekistan and, in March 2019, in cooperation with local and international partners, organized the first Hashar Week in Tashkent City, devoted to environmental issues and education of urban residents to sort and dispose of waste correctly.

Environmental education is integrated into extra-curricular activities, which take place at children centres for 7- to 18-year-olds, who participate in groups on local lore and the environment. About 30,000 children are enrolled in these groups. Enrolment costs per month (20,000 sum (about US\$2.40 at March 2019) in urban areas and 10,000 sum (about US\$1.20) in rural areas) are affordable for the population.



The main driving force for the non-formal and informal environmental education and ESD programmes and activities are environmental NGOs.

NGO “Ekomaktab”’s core activities focus on environmental protection, environmental education and awareness-raising. The NGO participated in the development of the GREEN PACK education resource in cooperation with CAREC, and in a number of other projects promoting environmental education.

Ecoforum of NGOs of Uzbekistan has a programme on ESD and environmental education, whereby each project implemented by Ecoforum contains a corresponding ESD or environmental education component. Ecoforum developed a low-cost accessible tool for teaching local communities and families about sustainable development and ecosecurity through secondary schools. Training sessions were organized for local communities and authorities on sustainable tourism, the importance of stakeholder involvement and development of sustainable tourism plans. The organization prepared and disseminated in some remote areas of the country a practical manual for the self-production and use of simple and budget-friendly structures for water and energy saving, sustainable farming and efficient use of natural resources.

The Ecological Movement of Uzbekistan and its territorial branches hold annually more than 300 educational activities and environmental events in the country’s educational institutions dedicated to environmental dates, such as World Wetlands Day, World Water Day, International Bird Day and others. Together with the education ministries, the Ecological Movement organizes competitions for pupils in primary school (e.g. “My native nature”) and students of higher education institutions (e.g. “The best idea for adaptation to climate change”). Since 2009, the Ecological Movement has been publishing the Buloqcha children’s environmental magazine, which is distributed free of charge in schools in Uzbekistan and other Central Asian countries.

Other environmental NGOs, such as NGO “Zarafshan” and Children Environmental Fund “Yashil Tulkin” (Samarkand), NGO “For Environmentally Clean Fergana” (Fergana), NGO “Union for the Defence of the Aral Sea and Amu Darya” (Nukus), NGO “KRASS” (Urgench), NGO “Logos” (Tashkent) and NGO “Rodnichok” (Tashkent Oblast) are engaged in environmental education and public awareness-raising, though mostly on a project basis.

The website “Information Eco-network” (<http://sreda.uz/>) regularly posts articles on environmental concerns and activities for awareness and outreach purposes.

#### *Training of civil servants*

In-service training of civil servants is mandatory every three years.

Environmental in-service training is done by SCEEP’s Centre for Retraining and Advanced Training of Environmental Professionals. Since 2017, the Centre has conducted various training courses for the environmental specialists of enterprises, staff of other ministries and institutions, public inspectors, state inspectors from districts, staff of the Centre for State Ecological Expertise and its territorial branches, etc. The training costs five minimum wages (approximately US\$123 at March 2019). Training costs for the staff of SCEEP and its affiliated institutions are covered by the Fund for Ecology, Environmental Protection and Waste Management.

In 2017 and 2018, the Centre provided specialized training to 8,477 persons, each of whom received a certificate (table 5.1). Training courses for the environmental specialists of enterprises last two weeks (72 hours). The Centre also provides 72 hours of training to representatives of bus depots and credit departments of banks that are dealing with loans for projects subject to ecological expertise. In 2019, the Centre introduced a new 36-hour training course for the drivers of waste collection vehicles.

**Table 5.1: Personnel trained by the Centre for Retraining and Advanced Training of Environmental Professionals, 2017–2018, number**

	2017	2018
Enterprises, ministries, institutions and organizations	128	27
Persons trained who received certificates	552	7 925
of which:		
Staff from enterprises, ministries, institutions and organizations	278	281
Developers	22	32
Public inspectors	18	7 031
Staff from SCEEP and affiliated institutions	234	581

Source: Centre for Retraining and Advanced Training of Environmental Professionals, 2019.

The Centre organizes training courses in its own premises and at the local level. In 2018, the Centre conducted 14 one-week (36 hours) training courses at the local level. In Tashkent City, it also conducted a training of trainers.

SCEEP organizes in-service training for its staff annually, to enhance their qualifications. The training is tailor made to the needs of staff, depending on their work area and responsibilities.

ESD is not integrated into the in-service training of civil servants working in the environmental areas.

Other governmental authorities and institutions each have their own centres for in-service training. Typically, environmental issues are included in the training programmes on an ad hoc basis, depending on the topic deemed necessary at the time of the training, which is tailor made for various civil servant target groups. ESD is not integrated into the in-service training of civil servants.

## 5.5 Legal, policy and institutional framework on education

### *Legal framework*

The 1992 Law on Nature Protection prescribes mandatory environmental education in all types of educational institutions. Other environmental protection laws include articles related to some aspects of environmental education. There are no provisions on ESD in the legislation.

### *Policy framework*

#### Concept of Education for Sustainable Development

In 2011, the then State Committee for Nature Protection, the Ministry of Public Education and the Ministry of Higher and Secondary Specialized Education adopted the Concept of Education for Sustainable Development (ESD) (2011 Joint Resolution No. 2/20/305). Key priority areas of the Concept are:

- Integration of the strategic objectives of ESD into the legislation in the sectors of education, environmental protection and socioeconomic development;
- Inclusion of the strategic objectives of ESD in governmental programmes;
- Improvement of the quality of education at all levels of the educational system.

As at 2019, the Concept does not appear to be implemented, in particular with regard to its first two priority areas. The text of the Concept is not available online on any of the governmental websites.

#### Concept for Environmental Education Development

The Concept for Environmental Education Development and its Action Plan were approved in May 2019 (2019 Resolution of the Cabinet of Ministers No. 434). They include several actions aimed at organizing in a systematic way the process of environmental education and upbringing, promoting environmental knowledge and culture among young people, further improvement of the environment by applying advanced innovative technologies and increasing the knowledge and skills of young people for nature conservation. Most actions are planned for the period 2019–2021. The SCEEP and the three education ministries must ensure quarterly submission to the Cabinet of Ministers of information on the implementation of the Concept and the Action Plan.

#### Other

The Action Strategy on Five Priority Directions for Development for the period 2017–2021 – the key midterm planning document in the country – includes activities for the development of education. Neither environmental education nor ESD is mentioned in the Strategy.

The Concept on Environmental Protection until 2030 (2019 Decree of the President No. 5863) underlines the need to improve the system of continuing environmental education by introducing environmental and sustainable development topics into the curriculum in all levels of education.

The Programme of Actions on Environmental Protection for 2013–2017 (2013 Resolution of the Cabinet of Ministers No. 142) includes among its goals the introduction of ESD, the broad dissemination of environmental knowledge and the improvement of environmental culture. The development of environmental education and ESD are included in one of the five priority directions of the Programme. The Programme includes a long list of concrete actions in the area of environmental education and ESD. As at March 2019, the only activities implemented are the establishment, in 2016, of the Centre for Retraining and Advanced Training of Environmental Professionals under SCEEP and activities by SCEEP to promote environmental protection and raise the environmental awareness of the public.



The Strategy for Transition to Green Economy in the period 2019–2030 (2019 Resolution of the President No. 4477) envisages integration of green economy themes into curricula of higher education and secondary specialized education and in teacher training.

The Second Education Sector Plan 2019–2023, prepared by the Government with the support of UNICEF and endorsed by several development partners, aims to contribute to improving equitable access to quality education at all levels. Safe and enabling learning environments are a strategic priority of the Plan. ESD is included in the Plan as an approach for the development of new curricula and to achieve Sustainable Development Goal 4. The First Education Sector Plan, implemented in the period 2013–2017 with the support of a US\$49 million grant from the Global Partnership for Education, included some ESD training activities conducted by UNDP, in cooperation with UNESCO, on human development, civic participation, gender equality and human rights, in the frameworks of higher and postgraduate education (347 people were trained).

#### Sustainable Development Goals and targets relevant to this section

The current status of Uzbekistan vis-à-vis targets 4.7 and 12.8 of the 2030 Agenda for Sustainable Development is described in box 5.3.

#### *Institutional framework*

SCEEP is in charge of the organization of environmental education, awareness-raising and education, as well as in-service and advanced training of environmental professionals. The Unit for Public Relations and Mass Media is in charge of overseeing environmental education and awareness-raising. The Unit has two staff positions, one of which is vacant as at March 2019. The SCEEP Centre for Retraining and Advanced Training of Environmental Professionals is in charge of environmental training for civil servants and interested representatives of business and civil society. The Centre has eight managerial staff and 17 trainers, including university professors and relevant staff of SCEEP.

The Ministry of Public Education has environmental education as part of its mandate. ESD is not included in the mandate of the Ministry.

The other two education-related ministries – the Ministry of Pre-school Education and Ministry of Higher and Secondary Specialized Education – do not

have environmental education or ESD explicitly included in their mandates.

The Centre for Vocational Education and Training under the Ministry of Higher and Secondary Specialized Education oversees vocational education and training, including the aspects of environmental education.

The Coordination Council for Environmental Education and ESD was established within the framework of the 2011 Concept of Education for Sustainable Development. It was meeting for some three years but discontinued its activities around 2014, reportedly due to a decline in interest from the institutions involved and because of the reorganization and staff changes within SCEEP in 2017. The exact composition of the Council is not known; however, representatives of at least three NGOs (“Ekomaktab”, “KRASS” and Ecoforum of NGOs of Uzbekistan) used to participate in the meetings of the Council. No minutes of meetings of the Council are available.

The Local Education Group, chaired by the Ministry of Public Education, consists of three education-related ministries and other ministries, as well as the International Development Partners’ Group. In August 2018, the Group endorsed the Second Education Sector Plan 2019–2023.

The National Training Centre on ESD was established in 2015 under NUU. The Centre is the leading body in the country working on ESD issues; however, without adequate political and financial support from the Government, this results in ad hoc activities based on the available donor funding.

#### *Participation in international processes*

Uzbekistan adopted the ECE Strategy for ESD in 2005 and participated in activities under the Strategy by submitting a pilot national implementation report in 2007 and a national implementation report in 2010. The country did not participate in reporting exercises in 2015 and 2018. Since 2015, the country’s participation in the meetings of the ECE Steering Committee on ESD has not been regular.

Uzbekistan participated in the United Nations Decade on ESD (2005–2014) and in the follow-up Global Action Programme (GAP) on ESD (2015–2019), including by joining the UNESCO Associated Schools Network (ASPnet). ESD-related activities were carried out mostly through projects implemented by several universities, such as NUU, Urgench State University and Fergana Polytechnic Institute, with support from UNESCO.

### Box 5.3: Targets 4.7 and 12.8 of the 2030 Agenda for Sustainable Development



#### **Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**

**Target 4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development**

Global target 4.7 has been nationalized by Uzbekistan with different wording, i.e. "By 2030, ensure that all pupils and students acquire the knowledge and skills necessary to promote sustainable development", thereby not mentioning ESD and the sustainable development themes included in the global target. Global indicator 4.7.1, "Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment", was nationalized without changes.

Environmental education is addressed well in the country. ESD is not yet integrated into the education system, occurring mostly on an ad hoc basis in project-based activities carried out by universities and NGOs. A few sustainable development themes are included in secondary education.

As at 2019, the 2011 Concept of Education for Sustainable Development does not appear to be implemented. The Coordination Council for Environmental Education and ESD discontinued its activities in 2014. The work of the National Training Centre on ESD, established in 2015 under NUU, suffers from the absence of political support from the Government as well as the lack of clear mandates on ESD in the country.

At the policy level, ESD was included in the Programme of Actions on Environmental Protection for the period 2013–2017, albeit with very limited implementation progress, covering only the environmental dimension of ESD. The Second Education Sector Plan 2019–2023 includes provisions on using ESD as an approach in developing the new curricula, the implementation of which will depend on the follow-up action from the three ministries of education in the country.

Delivering on global target 4.7 and indicator 4.7.1 by 2030 will not be possible for Uzbekistan without concerted and coordinated efforts by the Government and related stakeholders to integrate ESD into formal education at all levels and into non-formal and informal education.



#### **Goal 12. Ensure sustainable consumption and production patterns**

**Target 12.8: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature**

Global target 12.8 has been nationalized by Uzbekistan as "By 2030, provide the population with relevant information and awareness about sustainable development and lifestyle in harmony with nature". Global indicator 12.8.1, which is largely similar to global indicator 4.7.1, was nationalized without changes.

SCEEP is making efforts to provide online information of an educational nature about biodiversity, waste management, ambient air and the ozone layer. The Committee is promoting its activities and raises awareness on environmental protection through press conferences and talk shows and on the Facebook platform. Other institutions (e.g. Uzhydromet and the State Committee on Statistics) have yet to make information on environmental matters in their possession publicly accessible free of charge. Taking into account the cross-cutting nature of the environmental dimension of sustainable development, additional effort is needed from all governmental institutions to ensure the provision of information on environmental matters pertaining to their activities.

Several online newsletters, magazines and websites publish information about the environment and promote environmental awareness. A few NGOs are engaged in environmental education and public awareness-raising, although mostly on project-based activities.

Thus, Uzbekistan started taking action to raise awareness on sustainable development and lifestyles in harmony with nature. However, these activities lack an adequate political mandate and proper coordination among the authorities and institutions involved, as well as effective engagement with civil society. Many activities are project based and lack follow-up. Without additional efforts to ensure that the entire population has access to the relevant information and is aware of sustainable development and lifestyles in harmony with nature, and can make informed choices in that regard, delivering on global target 12.8 by 2030 will be difficult for Uzbekistan.

## 5.6 Assessment, conclusions and recommendations

### *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

### 6.1 General priorities for international cooperation related to the environment and sustainable development

Uzbekistan is undergoing a major transformation in its relationship with the international community. The launch, in 2017, of an ambitious programme of market-oriented reforms, opened a new path of increased participation and reinforced the country's position on the international stage. Uzbekistan aspires to and is striving to play a much stronger and cooperative role in the international landscape. However, this transformation will not be effected at all administrative levels and in all areas of public policy immediately. It will take a few years for the whole system and all those who have a role in it to fully reflect this unprecedented culture of international openness.

Increased regional and international cooperation and integration have become core vectors of this new paradigm, with Central Asian countries being assumed as the main priority of Uzbekistan foreign policy. In the last two years, the intensification of regional integration efforts by Uzbekistan is unquestionable. Some border demarcation issues were overcome, checkpoints were reopened, regional trade was scaled up, power lines were reconnected and the country expressed the willingness and interest to cooperate on large hydropower plant (HPP) construction.

Transboundary water resources management and addressing the Aral Sea disaster continue to stand out as the main priorities of Uzbekistan's international, regional and bilateral cooperation in the field of environment.

The Sustainable Development Goals were embraced by Uzbekistan as overarching goals in its main development policy objectives. The five priority areas identified in the 2017 Action Strategy on Five Priority Directions for Development for the period 2017–2021 are very much aligned with the global Sustainable Development Goals.

### 6.2 Global and regional multilateral environmental agreements

*Conservation and sustainable use of biodiversity and nature*

#### Convention on Biological Diversity

Uzbekistan has been a party to the 1992 Convention on Biological Diversity (CBD) since 1995. The State Committee on Ecology and Environmental Protection (SCEEP) is the competent authority for the CBD. In accordance with CBD requirements, Uzbekistan has prepared national reports on the state of biodiversity (the latest one submitted in 2019) and a thematic report on protected areas (PAs).

To implement the CBD requirements, Uzbekistan adopted the first National Biodiversity Strategy and Action Plan (NBSAP) in 1998 and the second one in 2019. The intensity of legislative and regulatory activities since 2012 on PAs clearly demonstrates the centrality of this instrument – the creation of PAs – in the policy of nature conservation and biodiversity in Uzbekistan. Challenges with CBD implementation include insufficient administrative capacity for implementation, significant gaps in critical information for the management of biodiversity, lack of coordination among institutions involved in PA management and difficulties in implementing cross-sectoral policies (chapter 11). The key concerns are to ensure that the PA network becomes ecologically representative, including all main representative landscapes and ecosystems, and that it is significantly extended. As at early 2019, PAs in the common understanding of the term cover only 4.63 per cent of the country, which is below the CBD Aichi Target 11 set for 2020 (at least 17 per cent of terrestrial and inland water areas).

Uzbekistan joined the 2000 Cartagena Protocol on Biosafety in late 2019 (chapter 13).

#### Convention concerning the Protection of the World Cultural and Natural Heritage

Uzbekistan has been a party to the 1972 Convention concerning the Protection of the World Cultural and

Natural Heritage since 1993. In 2016, Western Tien-Shan was inscribed onto the World Heritage List as the first natural property, adding to four previously inscribed cultural properties (Historic Centre of Bukhara (1993), Historic Centre of Shakhrisayabz (2000), Itchan Kala (1990), Samarkand – Crossroad of Cultures (2001)). Three properties under the “natural” criterion and three under the “mixed” criterion were inscribed by Uzbekistan to the tentative list in 2008.

The Western Tien-Shan transboundary site combines the natural heritage of territories in Kazakhstan, Kyrgyzstan and Uzbekistan, consisting of 13 component parts covering a combined area of 528,177 ha. In Uzbekistan, Western Tien-Shan comprises two areas: Bashkizylsay (core zone of Ugam-Chatkal State Biosphere Reserve (SBR), and Maydantal (Chatkal State Biosphere Strict Nature Reserve (SBSNR)), with outstanding diversity of plants and animal species, a high level of endemism and many species of global conservation importance.

When Western Tien-Shan was enrolled on the World Heritage List in 2016, some recommendations were included in the nomination, namely, the need to: finalize the transboundary management framework for the property; further develop collaboration in the framework of a tripartite memorandum for management of the property; review and rationalize the boundaries of the components of the property and their buffer zones; and overcome the lack of capacity on transnational management. Although a joint report on the state of conservation of the transboundary property was not submitted to the World Heritage Committee, as it should have been, in 2018,

Uzbekistan submitted a report on the state of conservation of the Uzbek components of Western Tien-Shan. This report underlined the development of a draft memorandum of cooperation on the management and protection of the property prepared by the Committee on Forestry and Fauna of the then Ministry of Agriculture of Kazakhstan, the State Agency for Environmental Protection and Forestry under the Government of Kyrgyzstan and SCEEP of Uzbekistan. This memorandum, signed by the three countries in February 2019, foresees the establishment of a coordinating working group and a monitoring programme for the property.

The main challenges to the property are poaching, cattle grazing, illegal logging, illegal and legal haymaking, illegal harvesting of flowers and unsustainable tourism practices.

The current stand of Uzbekistan vis-à-vis target 11.4 of the 2030 Agenda for Sustainable Development is reflected in box 6.1.

#### World Network of Biosphere Reserves

Chatkal biosphere reserve (which currently includes two protected areas – the Chatkal State Biosphere Strict Nature Reserve (SBSNR) and Ugam-Chatkal State Biosphere Reserve (SBR)) is the only biosphere reserve of Uzbekistan inscribed in the UNESCO World Network of Biosphere Reserves. It covers the south-western end of the Chatkal range in the Western Tien-Shan Mountains and comprises a high habitat and species diversity.

#### **Box 6.1: Target 11.4 of the 2030 Agenda for Sustainable Development**



**Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable**  
**Target 11.4: Strengthen efforts to protect and safeguard the world’s cultural and natural heritage**

Uzbekistan chose national indicator 11.4.1 (State budget expenditure on cultural development per capita) to measure target 11.4. As a stand-alone indicator, this does not allow the assessment of efforts to protect and safeguard the world’s cultural and natural heritage. Within “cultural development”, much more is included than the world’s cultural and natural heritage.

The country does not produce global indicator 11.4.1 (Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)). Producing global indicator 11.4.1 would allow proper evaluation of Uzbekistan’s efforts taken specifically to protect the world’s cultural and natural heritage and would better correspond to the intended meaning of target 11.4.



**Photo 6.1: Lake Tudakul**

*Photo credit: Ms. Mariya Gritsina*

In 2015, Chatkal SBSNR was subject to a periodic review for not meeting the criteria of the Statutory Framework of Biosphere Reserves. As a follow-up to the recommendation of the International Advisory Committee for Biosphere Reserves, a roadmap on protection and development of the biosphere reserve was adopted in 2017. The Roadmap envisages: updating the inventory of the protection, buffer and transition areas of the biosphere reserve; developing cooperation within the South and Central Asia Man and the Biosphere (MAB) Network, and undertaking scientific studies on biodiversity in the biosphere reserve. The designation of Ugam–Chatkal SBR in 2018 allowed for the establishment of the buffer zone and transition area for the Bashkizylsai section of it, while, in 2019, works on establishing the buffer zone for the Maydantal section are ongoing.

Uzbekistan is working on a new submission to the UNESCO World Network of Biosphere Reserves, for Lower Amu Darya Biosphere Reserve.

Convention on Wetlands of International Importance, especially as Waterfowl Habitat

Uzbekistan acceded to the 1971 Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention) in 2001.

SCEEP is the Administrative Authority. The Institute of the Gene Pool of Plant and Animals of the Academy of Sciences was the Focal Point for Matters Relating to The Scientific and Technical Review Panel; however, the Institute was dissolved and no longer exists. The role of the National Focal Point for Matters Relating to The Programme on Communication, Education, Participation and Awareness was entrusted to the former State Inspectorate for the Protection and Rational Use of Fauna and Flora (Gosbiocontrol); it is now assumed by SCEEP. The country has not regularly submitted reports to the Convention, having complied with reporting obligations only in 2010 and 2018.

Uzbekistan has two sites designated as Wetlands of International Importance (Ramsar sites), with a combined surface area of 558,400 ha. Lake Dengizkul, designated in 2001, is the largest saline closed water body fed by irrigation run-off in the south-western part of the Kyzylkum Desert, with typical ecological conditions of natural lakes situated in the deserts of Central Asia. In 2008, the Aydar-Arnasay Lakes System, the largest reservoir in Uzbekistan, consisting of freshwater lakes situated in the middle stream of the Syr Darya River and on the irrigated massif of the Golodnaya Steppe and Kyzylkum Desert, became the

second Ramsar site. None of these sites have a management plan.

With the support of Sweden, a proposal for a designation of a third Ramsar site was developed, namely, for Tudakul and Kuymazar water reservoirs, in the south-western part of the Kyzylkum Desert, 23 km east of Bukhara City. Uzbekistan submitted the proposal for designation to the Ramsar Secretariat in 2016 and was then asked to revise the submission with additional information. As at June 2019, no revised submission had been made.

In the last eight years, the country carried out activities for the implementation of the Ramsar Convention, such as: the monitoring of biological diversity in Lake Dengizkul with a focus on hydrophilic bird species; the implementation of the joint project “Protection and rational use of wetlands Lake Sudochye system on the Ustyurt plateau”, with the technical support of CAREC and financial support of the United States Agency for International Development (USAID); and the development, under that project, of preliminary assessments to inform a proposal for the designation of Sudochye as a Ramsar site.

The challenges in implementing the Convention remain generally the same as in 2010: the absence of permanent and stable funding devoted to the conservation and restoration of wetlands; the absence of a public policy for the implementation of the provisions of the Convention; insufficient monitoring and control of the use of flora and fauna on the Aydar-Arnasay Lakes System; insufficient monitoring and control of compliance with environmental legislation on Ramsar sites and wetlands in general; and insufficient expertise on wetlands management and ecosystems services. A national wetland inventory, although planned for some years, has not yet been developed. A new and serious challenge is to protect the “Aydar-Arnasay Lakes System” Ramsar Site from being chosen as the location for the future nuclear power plant (chapter 12).

Although Uzbekistan is not part to the Ramsar Regional Initiative for Central Asia,<sup>18</sup> the country recently participated in meetings under the Initiative.

The main priorities for the country for the future are: to strengthen the protection and sustainable use of biodiversity in Ramsar sites; to improve the monitoring of biological diversity on those sites; and

to prepare and approve management plans for all Ramsar sites.

#### Convention on the Conservation of Migratory Species of Wild Animals

Uzbekistan ratified the 1979 Convention on the Conservation of Migratory Species of Wild Animals (CMS) in 1998. SCEEP is the National Focal Point and the Institute of Zoology of the Academy of Sciences is a member of the Scientific Council. Under the umbrella of the CMS, Uzbekistan signed four memoranda of understanding (MOUs): in 1995 on the slender-billed curlew, in 1998 on the Siberian crane, in 2002 on the Bukhara deer and in 2006 on the saiga antelope (box 6.2). Submission of national implementation and MOU reporting to the Convention Secretariat has been quite regular.

There is no specific plan of action for the fulfilment of CMS obligations in Uzbekistan, but there are legislative acts and strategies that unambiguously contribute to the implementation of the CMS, namely, those relating to biodiversity and PAs.

#### Agreement on the Conservation of African-Eurasian Migratory Waterbirds

In 2004, Uzbekistan acceded to the 1995 Agreement on the Conservation of African-Eurasian Migratory Waterbirds, which was developed under the framework of the CMS. Reporting obligations have not been complied with since 2008. The nomination of the national focal point is pending, while the Technical Focal Point is entrusted to the Institute of Zoology of the Academy of Sciences.

There are more than 400 bird species recorded in Uzbekistan, of which 200 are inhabitants of wetlands. Of these, 48 species are included in the national Red Data Book (Tashkent, 2009), while 43 species are included in the Red Lists of the International Union for Conservation of Nature (IUCN). Of the 52 international bird areas (IBAs) in Uzbekistan, only 17 completely or partially overlap the existing PAs. The IBAs were classified on the basis of studies conducted by the Institute of Zoology and the Uzbekistan Society for the Protection of Birds (UzSPB) with the support of different international organizations (World Bank/GEF, Ramsar Convention, Wetlands International, WWF Russia). These studies provided information on the most important wintering grounds and stays during migrations and nesting.

<sup>18</sup> The Ramsar Regional Initiative for Central Asia supports countries in that region in implementing the Ramsar Convention and its Strategic Plan for the period 2016–2024.



**Box 6.2: Saiga antelope, a good example of cooperation with the joint support of CITES and the CMS**

The 2005 Memorandum of Understanding concerning the Conservation, Restoration and Sustainable Use of the Saiga Antelope (*Saiga tatarica*), a critically endangered species included in the national Red List since 2008, was signed by Uzbekistan in 2006. The MoU was developed under the auspices of the CMS and provides an international framework for Kazakhstan, Mongolia, the Russian Federation, Turkmenistan and Uzbekistan, where the saiga occurs, to work more closely together on regional conservation issues. The MoU has been in force since 2006 (for Mongolia, since 2010) and has been signed by all range States and nine cooperating organizations.

The overall saiga population numbers increased from 67,000 in 2006, when the MoU came into force, to 228,000 in 2018, reflecting the good management and joint efforts by the countries and cooperating organizations to implement the Memorandum, as well as the international trade control applied under CITES. Although showing a positive trend, the species experienced sudden dramatic declines, which showed that the measures agreed in 2005 were not sufficient and not adequately adapted to new and growing challenges, such as disease outbreaks, linear infrastructure (fences, railroads, pipelines, roads, etc.), habitat deterioration and poaching.

In 2016, CITES adopted a series of measures, inter alia, to improve trade controls and enhance collaboration between saiga range States and consuming countries, and to support the CMS MoU and implementation of the Action Plan concerning Conservation, Restoration and Sustainable Use of the Saiga Antelope. At the 17th meeting of the Conference of the Parties to CITES in 2016, four decisions directed to range States of the saiga antelope were approved. These decisions instructed the five range States to:

- Fully implement the measures directed to them in the Medium-Term International Work Programme for the Saiga Antelope (MTIWP) (2016–2020);
- Provide information to the Secretariat on the measures and activities they undertook;
- Carefully manage the trade in, and consumption of, saiga products and derivatives;
- Support the development of tools to facilitate the identification, sourcing and determination of age of saiga horns;
- Promote training of, and cross-border collaboration among, enforcement agencies;
- Tackle new illegal trade channels, such as those using social media;
- Collaborate to enhance in situ and ex situ conservation of saiga antelopes, develop joint actions and programmes in support of saiga conservation and restoration, and leverage financial resources for undertaking these activities.

In order to comply with the decisions and to significantly improve cooperation on the protection and conservation of saiga, range States have agreed, in April 2019, on a set of conservation priorities guiding the work under the MoU up to 2025. They reviewed progress in implementing the MoU and its MTIWP 2016–2020 and developed a new work programme covering the period 2021–2025. Strengthened and expanded measures were agreed, namely, encouraging registration, control and monitoring of stockpiles, improving internal market controls for saiga parts and products, harmonizing legislation to implement CITES, and reducing demand for and use of saiga horn in traditional Asian medicines.

**Photo 6.2: Bukhara deer (*Cervus elaphus bactrianus*)**



Photo credit: Ms. Mariya Gritsina

### Convention on International Trade in Endangered Species of Wild Fauna and Flora

Uzbekistan became a party to the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1997. The country has designated SCEEP as the Management Authority. The Institute of Botany and the Institute of Zoology of the Academy of Sciences are designated as Scientific Authority for the Convention. The country fulfilled its biennial reporting obligations only from 2009 to 2014.

The main legal instrument for ensuring compliance with the CITES obligations is the 2014 Resolution of the Cabinet of Ministers No. 290, which includes, in Annex 3, the rules on CITES permitting procedures. The permits are issued by SCEEP, while the agreement of the Cabinet of Ministers and a scientific justification provided by the Academy of Sciences are compulsory. The Resolution also determines poaching tools and bans on importation of such tools into the country.

Despite efforts undertaken to comply with the requirements of the Convention, following the conclusions of the national legislation project conducted by the CITES Secretariat, Uzbekistan was identified by the Standing Committee at its 69th meeting in 2017 as a party whose legislation did not meet the minimum requirements under CITES. Since the beginning of 2018, work is being developed, with the assistance of the CITES Secretariat, to update Resolution No. 290 with a view to ensuring the fully fledged integration of CITES requirements into Uzbek legislation.

The Red Data Book of Uzbekistan (2009) contains 184 endangered species of animals. Of those, 88 endangered species and subspecies are included in the Appendices of CITES. The exports and imports of species included in the Appendices of CITES primarily concern the sale of tortoises, decorative birds and some birds of prey. There is no up-to-date information available on the total number of seizures/confiscations per year, although it can be assumed that it is a significant number, taking into account the available information on some seizures/confiscations in 2013 and 2014.

The current stand of Uzbekistan vis-à-vis targets 15.7 and 15.c of the 2030 Agenda for Sustainable Development is reflected in box 6.3.

#### *Desertification*

Uzbekistan ratified the 1994 United Nations Convention to Combat Desertification (UNCCD) in

1995. The National Focal Point is the State Committee on Forestry. The country participates in the work undertaken under the auspices of the UNCCD and has complied with its reporting obligations. National programmes to combat desertification have been adopted.

Desertification and general degradation of land are key problems in Uzbekistan. Uzbekistan adopted the voluntary Land Degradation Neutrality target, “By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world”. The country is benefiting from the support of the Land Degradation Neutrality Target Setting Programme (LDN TSP), a partnership initiative implemented by the Secretariat and the Global Mechanism of the UNCCD, in assessing the possibility of using global indicators proposed by the UNCCD for the assessment of land degradation neutrality and determination of the baseline state of land degradation.

Within the preparation of the 2019 Report on the LDN TSP in Uzbekistan, a comprehensive assessment of the extent to which the territory of Uzbekistan was exposed to the processes of desertification and drought was carried out. The preliminary estimates, based on global and national indicators, point to 26–28 per cent of the total area of the country being affected by degradation. The main “hotspots” are the irrigated and non-irrigated zones of the Aral Sea area.

Uzbekistan is making significant efforts to stabilize and improve the state of land in the Aral Sea region, including the creation of protective forest plantations on the dry bottom of the Aral Sea (chapter 11), land improvement, improving land fertility and restoration of degraded ecosystems. A number of programmes and projects have been prepared and are being implemented in cooperation with international organizations.

Much work has been done to mitigate the effects of soil degradation, in particular, those deriving from the Aral Sea disaster. This can also be attested by the number of projects devoted to sustainable land management and improving land quality in which the country is fully involved:

- GEF/UNDP/State Committee on Land Resources, Geodesy, Cartography and State Cadastre project “Reducing Pressures on Natural Resources from Competing Land Use in Non-Irrigated Arid Mountain, Semi-Desert and Desert Landscapes of Uzbekistan”, 2013–2018;



- GEF/UNDP/SCEEP project “Sustainable Use of Natural Resources and Forestry in Key Mountain Areas Important for Globally Significant Biodiversity”, 2017–2021;
- GEF/FAO/State Committee on Forestry project “Sustainable Management of Mountain and Valley Forests”, 2018–2021;
- Central Asian Countries Initiative for Land Management Programme “Integrated Natural Resources Management in Drought-Prone and Salt-Affected Agricultural Production Landscapes”, 2018–2021.

*Air protection, ozone layer protection and climate change*

#### Convention on Long-range Transboundary Air Pollution

Uzbekistan is not a party to the 1979 Convention on Long-range Transboundary Air Pollution (CLRTAP), nor to its eight Protocols. The National Focal Point is SCEEP.

A study on the feasibility of acceding to CLTRAP and to the 1984 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) was envisaged in the Programme of Actions on Environmental Protection for the period 2013–2017 but has not yet been concluded.

The country hosted workshops conducted by the CLRTAP Secretariat on emission inventories in 2015 and 2018. CLTRAP has been assisting the country in developing and implementing measures to reduce emissions of harmful substances that lead to transboundary air pollution and on maintaining emission inventories for various sectors of the economy. In 2015, analytical work was carried out to review the national legislation and, as a result, some definitions of the Convention were included in the draft amendments to the Law on Ambient Air Protection. The draft amendments provide for articles on transboundary air pollution and the gradual introduction of more stringent requirements for emissions of pollutants into the atmosphere for stationary and mobile sources.

#### **Box 6.3: Targets 15.7 and 15.c of the 2030 Agenda for Sustainable Development**



**Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss**  
**Target 15.7: Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products**  
**Target 15.c: Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities**

Uzbekistan nationalized target 15.7 but has not nationalized target 15.c of the 2030 Agenda, possibly because of the similarity of the global indicators.

Poaching of protected species is identified in the Sixth National Report to the CBD as one of the main reasons for biodiversity loss in Uzbekistan. One of the measures used in the country to combat poaching is the establishment of quotas on the procurement of wild species of animals and this is considered to be the most efficient arrangement, which directly influences the level of poaching. In spite of this, among actions to be implemented in the coming years in the area of nature conservation and biodiversity, few are directed to the fight against poaching and trafficking, the most relevant of which is strengthening the capacity of inspectors to prevent cases of illegal hunting and trade. No measure is foreseen that has regard to increasing the capacity of local communities to pursue sustainable livelihood opportunities.

It is difficult to assess the true dimension of poaching and trafficking of protected species because data on the current size of wildlife populations are not available. Therefore, global indicator 15.c.1 (Proportion of traded wildlife that was poached or illicitly trafficked) cannot be calculated. Similarly, no data are available for calculating the national indicator chosen by the Uzbek authorities for assessing target 15.7 (national indicator 15.7.1: Proportion of detected illegal trade in the total trade volume of wildlife flora and fauna and its products).

Collecting data on wildlife populations, assessing data on poaching and trafficking, making data available to the public, promoting awareness-raising campaigns for mobilizing local communities in support of wildlife conservation, strengthening transboundary cooperation with neighbouring countries on the protection of seasonal movements of protected species and on illegal trade, and capacitating the custom controls are priority actions for Uzbekistan to implement in pursuit of targets 15.7 and 15.c of the 2030 Agenda for Sustainable Development.

CLRTAP is increasingly focusing on providing expertise and guidance to the Eastern European, Caucasus and Central Asian countries. In particular, it gives access to technical information and supports task forces under its aegis, such as the Task Force on Techno-Economic Issues. Documents produced by this Task Force can serve as tools for setting emission limit values (ELVs) based on best available techniques (BAT). Unlike EU Best Available Techniques Reference Documents (EU BREFs), which have more stringent BAT-based ELVs, documents produced by the Task Force are specifically developed for countries with transition economies.

Preparatory work is under way to submit to the Cabinet of Ministers a proposal for the accession of Uzbekistan to CLRTAP and the EMEP Protocol; however, there is no information on a time frame for Uzbekistan to accede to either.

#### Vienna Convention for the Protection of the Ozone Layer

Uzbekistan became a party to the 1985 Vienna Convention for the Protection of the Ozone Layer and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer in 1993. In 1998, Uzbekistan accepted the London and Copenhagen Amendments and, in 2006, the Montreal and Beijing Amendments to the Protocol. Implementation of the Convention and the Protocol is under the responsibility of SCEEP. Reporting obligations have been fulfilled.

Since 2001, Uzbekistan has continuously reduced its consumption of ozone-depleting substances (ODSs). The improvement of import and export regulations for ODSs and products containing ODSs was fulfilled in 2018 (2018 Resolution of the Cabinet of Ministers No. 17), as assumed in Uzbekistan's commitments under the Batumi Action for Cleaner Air.

SCEEP is responsible for issuing permits for importing into and exporting from Uzbekistan certain ODSs and products containing them. There are also bans on imports of products containing ODSs (HCFCs) or dependent on them.

The 2018 Resolution No. 17 includes a regulation on the procedure for allocating quotas for imports of ODSs for the period 2018–2030. Until 2030, a phased withdrawal and a complete ban on imports of ODSs is expected to be implemented. Quotas are set in accordance with decision XIX/6 of the parties to the Montreal Protocol, according to which an accelerated schedule has been adopted for removing ODSs of group I of list C (or HCFCs) from circulation, with full consideration of the risks associated with the use of

alternative substances with high global warming potential. Pursuant to Resolution No. 17, the Customs Committee monitors imports and exports of ODSs and products containing them.

Uzbekistan has received support and technical assistance on ozone layer protection. In the period 2013–2018, Uzbekistan, along with three other countries (Belarus, Tajikistan and Ukraine), took part in a GEF-financed and UNDP-supported project to accelerate HCFC phase-out. Capacity-building activities for customs officers and the refrigeration sector have been realized, along with investments (US\$1.4 million for Uzbekistan). The next reduction step should be 99.5 per cent from the baseline level (1989) in 2020, to complete phase-out by 2030. A new UNDP/GEF joint project, “Complete HCFC Phase-out in Uzbekistan through Promotion of Zero ODS Low GWP Energy Efficient Technologies”, started in 2019.

Uzbekistan is a non-Article 5 party to the Kigali Amendment to the Montreal Protocol for the phase-out of hydrofluorocarbons (HFCs). HFCs do not deplete the ozone layer but their global warming potential is 1,000 times more than that of CO<sub>2</sub>. For the purposes of the Kigali Amendment, the non-Article 5 parties are divided into two groups. Belarus, Kazakhstan, the Russian Federation, Tajikistan and Uzbekistan form the second group. For this group, the baseline HFC consumption is calculated as the average in the period 2011–2013 plus 25 per cent of HCFC baseline production/consumption. The stages of HFC reduction for Uzbekistan compared with the baseline production and consumption (2011–2013) are 5 per cent by 2020, 35 per cent by 2025, 70 per cent by 2029, 80 per cent by 2034 and 85 per cent by 2036 and thereafter. As at 2019, the country is considering ratification of the Kigali Amendment.

#### United Nations Framework Convention on Climate Change

Uzbekistan acceded to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) in 1993, and ratified the 1997 Kyoto Protocol in 1999 and the 2015 Paris Agreement in 2018. The National Focal Point is Uzhydromet. Reporting obligations in respect of national communications and GHG emission inventories have been fulfilled, though the preparation of the GHG inventories is almost exclusively financed through project activities supported by donor funds (chapter 7).

The 2017 (Intended) Nationally Determined Contribution ((I)NDC) of Uzbekistan states the overall aim, goals and measures for the country on climate

change mitigation and adaptation until 2030. The main target sector is energy, subordinated to the aspirational target: to decrease specific emissions of GHGs per unit of GDP by 10 per cent by 2030 from the level of 2010.

In order to achieve the 2030 target, Uzbekistan committed to strengthen the institutional capacity and improve the legal framework for renewable energy and energy efficiency. The country adopted a roadmap for renewable energy development in the form of the 2017 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 (2017 Resolution of the President No. 3012). This derives from the priorities set within the 2017 Action Strategy on Five Priority Directions for Development for the period 2017–2021 and the associated goal to increase the share of renewables in power production from 12.7 per cent in 2016 to 19.7 per cent by 2025.

The (I)NDC also includes further measures for energy saving aimed at decreasing consumption of primary energy, mainly natural gas. In general, (I)NDC energy-saving measures are the ones included in the 2015 Programme of Measures to Reduce Energy Intensity and Introduce Energy Efficient Technologies in Economic Sectors and the Social Sector for the period 2015–2019 (2015 Resolution of the President No. 2343).

Significant efforts in mitigation in the energy sector have not been accompanied by the same intensity of action in other sectors.

Implementation of Clean Development Mechanism (CDM) projects (table 7.2) within the framework of the Kyoto Protocol has been a success in Uzbekistan and is likely to continue to play an important role for mitigation and adaptation purposes.

Adaptation efforts are also expected in the coming years, including several devoted to the Aral Sea region, in line with the 2015 Comprehensive Programme of Measures related to Mitigation of the Consequences of the Aral Disaster, Rehabilitation and Socio-Economic Development of the Aral Sea Region for the period 2015–2018 (2015 Resolution of the Cabinet of Ministers No. 255). Many adaptation measures are related to agriculture, such as: improvement of the climate resilience of agriculture through diversification of food crop production patterns; conservation of germplasm and indigenous plant species and agricultural crops resistant to droughts, pests and diseases; and development of biotechnologies and breeding of new crop varieties adapted to changing climatic conditions.

Uzbekistan works closely with the Green Climate Fund (GCF) and the Adaptation Fund (AF) under the UNFCCC. The UNDP/AF/Uzhydromet project “Developing climate resilience of farming communities in the drought-prone parts of Uzbekistan” provides examples of good adaptation practices for further dissemination in the country. Uzbekistan has submitted a project proposal to the GCF to prepare a national adaptation plan.

Regional cooperation efforts on mitigation and adaptation to climate change in Central Asia that would materialize in concrete projects on the ground with the participation of Uzbekistan have been insufficient.

#### *Waste and chemicals management*

##### Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

Uzbekistan acceded to the 1989 Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention) in 1996. Uzbekistan has not ratified the Ban Amendment and the Protocol on Liability and Compensation. Implementation of the Convention is under the responsibility of SCEEP. The country has not fulfilled its reporting obligations since 2013.

There have been no developments about the implementation of the Convention since 2010. The legal and programmatic framework on hazardous waste, including its transboundary movements, is today what it was in 2010, mainly based on the 2000 Resolution of the Cabinet of Ministers No. 151 about control of imports and exports of environmentally hazardous products and waste to Uzbekistan and from its territory. Uzbekistan does not have any restriction on exports or on imports of hazardous waste for final disposal or recovery, nor for the transit of waste through the country. Information on transboundary movement of waste in the period 2015–2017 is shown in table 10.8.

##### Convention on Persistent Organic Pollutants and Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

Uzbekistan acceded to the 2001 Convention on Persistent Organic Pollutants (POPs Convention or Stockholm Convention) in 2019. It is not a party to the 1998 Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC Convention or Rotterdam Convention). SCEEP is the national

authority responsible for POPs. The national POPs inventory dates back to 2009 (chapter 10).

Uzbekistan has been participating in the Strategic Approach to International Chemicals Management (SAICM) process. No close cooperation with international organizations on implementation of SAICM has been identified for a long time, since the preparation of the National Profile on Management of Chemical Substances in 2012. In 2019, a joint project by the United Nations Institute for Training and Research (UNITAR) and SCEEP developed a draft national strategy for the introduction of the Globally Harmonized System of Classification and Labelling of Chemicals in Uzbekistan.

#### Minamata Convention on Mercury

Uzbekistan is not a party to the 2014 Minamata Convention on Mercury. As at 2019, the country is considering accession to this instrument.

#### Convention on the Transboundary Effects of Industrial Accidents

Uzbekistan is not a party to the 1992 Convention on the Transboundary Effects of Industrial Accidents (chapter 15).

#### *Public participation*

Uzbekistan is not a party to the 1998 Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) (chapter 5) and its 2003 Protocol on Pollutant Release and Transfer Registers (PRTR Protocol) (chapter 4).

#### *Environmental assessment*

Uzbekistan is not a party to the 1991 Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), nor to its 2003 Protocol on Strategic Environmental Assessment (SEA Protocol). The country has no practical experience in transboundary EIA (chapter 2). Its legislation does not include an SEA system (chapter 1).

Comprehensive reviews of the legal and institutional frameworks of Uzbekistan vis-à-vis the provisions of the Espoo Convention and its Protocol on SEA were prepared upon the request of Uzbekistan in 2018–2019 with the substantive support of the ECE Secretariat and financial support from the German Federal Environment Ministry's Advisory Assistance Programme and the Government of Switzerland.

The reviews concluded that the legal and institutional frameworks of Uzbekistan are not in line with the Convention and the Protocol, although some elements of the required systems already exist. Uzbekistan has committed to undertake legislative reform with a view to aligning the country's environmental assessment legislation with the Espoo Convention and its Protocol on SEA. However, a number of impediments may hinder the process. These include: (i) limited awareness of the SEA and EIA in line with the Convention and their benefits among the sectoral planning authorities; (ii) gaps and contradictions in the legislative and institutional frameworks; (iii) lack of understanding of the roles and responsibilities of various authorities in the EIA and SEA process; and (iv) limited institutional and human capacities to implement SEA and transboundary EIA initiatives.

#### *Water*

#### Convention on the Protection and Use of Transboundary Watercourses and International Lakes

Uzbekistan acceded to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) in 2007.

In 2011, Uzbekistan accepted the amendments to Articles 25 and 26 of the Water Convention. The amendments open the Convention to the participation of countries outside the ECE region. This has a direct implication for Uzbekistan, in the event that Afghanistan joins the Convention.

The first reporting exercise under the Water Convention, including for assessing the global Sustainable Development Goals indicator 6.5.2 (box 6.4), has had active participation from Uzbekistan.

#### Protocol on Water and Health

Though Uzbekistan is not yet a party to the 1999 ECE/WHO Regional Office for Europe Protocol on Water and Health, work under the Protocol is ongoing with the Ministry of Health as the lead focal point, in cooperation with the Ministry of Foreign Affairs. Uzbekistan has attended high-level meetings and actively participated in regional activities carried out under the treaty.

Two national awareness-raising workshops on the Protocol took place in Uzbekistan. The first, in 2015, aimed at familiarizing the Uzbek authorities with the benefits of becoming a party to the Protocol. Uzbekistan identified its concerns related to the transboundary provisions of the Protocol and agreed to seek related advice from the Compliance



Committee of the Protocol. In response to this, the Compliance Committee produced, in 2017, an Interpretive Note on the provisions of the Protocol related to transboundary waters. The second event, in 2017, introduced core legal provisions of the Protocol and its role in attaining the 2030 Agenda for Sustainable Development and implementing the Ostrava Declaration on Environment and Health. The briefing was organized back-to-back with a technical workshop on small-scale water and sanitation supplies and water safety plans conducted by the WHO Regional Office for Europe.

As at 2019, the accession process is ongoing and the Ministry of Health is working towards setting up a multi-stakeholder working group to conduct baseline analysis for the target-setting process under the Protocol.

#### Convention on the Law of the Non-navigational Uses of International Watercourses

Uzbekistan became a party to the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses in 2007.

### **6.3 Subregional and bilateral cooperation on transboundary waters and environmental protection**

#### *Transboundary water cooperation*

#### Subregional cooperation in the Aral Sea

#### Basin

Transboundary issues in water management are undoubtedly of crucial importance to Uzbekistan, as

the country is a downstream riparian of the Amu Darya and Syr Darya Rivers, with a water dependency ratio of 77 per cent, and its population, especially in the Republic of Karakalpakstan and Khorezm Oblast, has been among the most adversely effected by the Aral Sea disaster (box 6.5). Map 6.1 shows the changes in the area of the Aral Sea since 1960.

The management of transboundary water resources has marked cooperation among countries in this region since the early 1990s. Most of the region's surface water resources are generated in Kyrgyzstan, Tajikistan and Afghanistan and run through Central Asia – crossing the downstream countries of Kazakhstan, Turkmenistan and Uzbekistan – through two main rivers, the Syr Darya and the Amu Darya, which are part of the Aral Sea Basin. Poor in water resources, the Basin's downstream countries are rich in hydrocarbons – exactly the opposite situation to the upstream Kyrgyzstan and Tajikistan.

This uneven distribution of natural resources opens, in principle, a vast field for regional cooperation. In practice, over time, cooperation has faded, especially after initial attempts to establish it.

In the past decade, the intentions of Kyrgyzstan and Tajikistan to develop hydropower projects added another layer of complexity to the already fragile regional cooperation. Concerns were expressed about the possibility that the upstream states would concentrate the water release in winter for power production, thus reducing the availability of water resources for releases for irrigation in spring and summer.

#### **Box 6.4: Target 6.5 of the 2030 Agenda for Sustainable Development (transboundary aspects)**



**Goal 6: Ensure availability and sustainable management of water and sanitation for all**  
**Target 6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate**

One of the two global indicators for this target is the proportion of transboundary basin area with an operational arrangement for water cooperation (indicator 6.5.2). Uzbekistan did not include indicator 6.5.2 in its list of national Sustainable Development Goal indicators.

In 2018 Uzbekistan reported in a timely manner on the global indicator 6.5.2 to ECE and UNESCO and highlighted that, since data related to its transboundary aquifers are lacking, no overall value for indicator 6.5.2 could be provided. For the rivers and lakes component, the value of the indicator for Uzbekistan is 59.3 per cent.

There are several transboundary water agreements and arrangements among the five Central Asian countries, but these focus mainly on the Amu Darya and Syr Darya Rivers and do not cover cooperation on the protection of water ecosystems and water quality. Transboundary groundwater is not covered by any kind of operational arrangement. Possible actions on target 6.5 for Uzbekistan could also include undertaking, in cooperation with neighbouring countries, a thorough inventory of transboundary groundwater to identify the needs for cooperation agreements.

**Box 6.5: The Aral Sea disaster**

The Aral Sea Basin is shared among Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Severe over-exploitation of the available water resources, especially from the two main rivers of the region, Amu Darya and Syr Darya, led to an environmental, social and economic disaster.

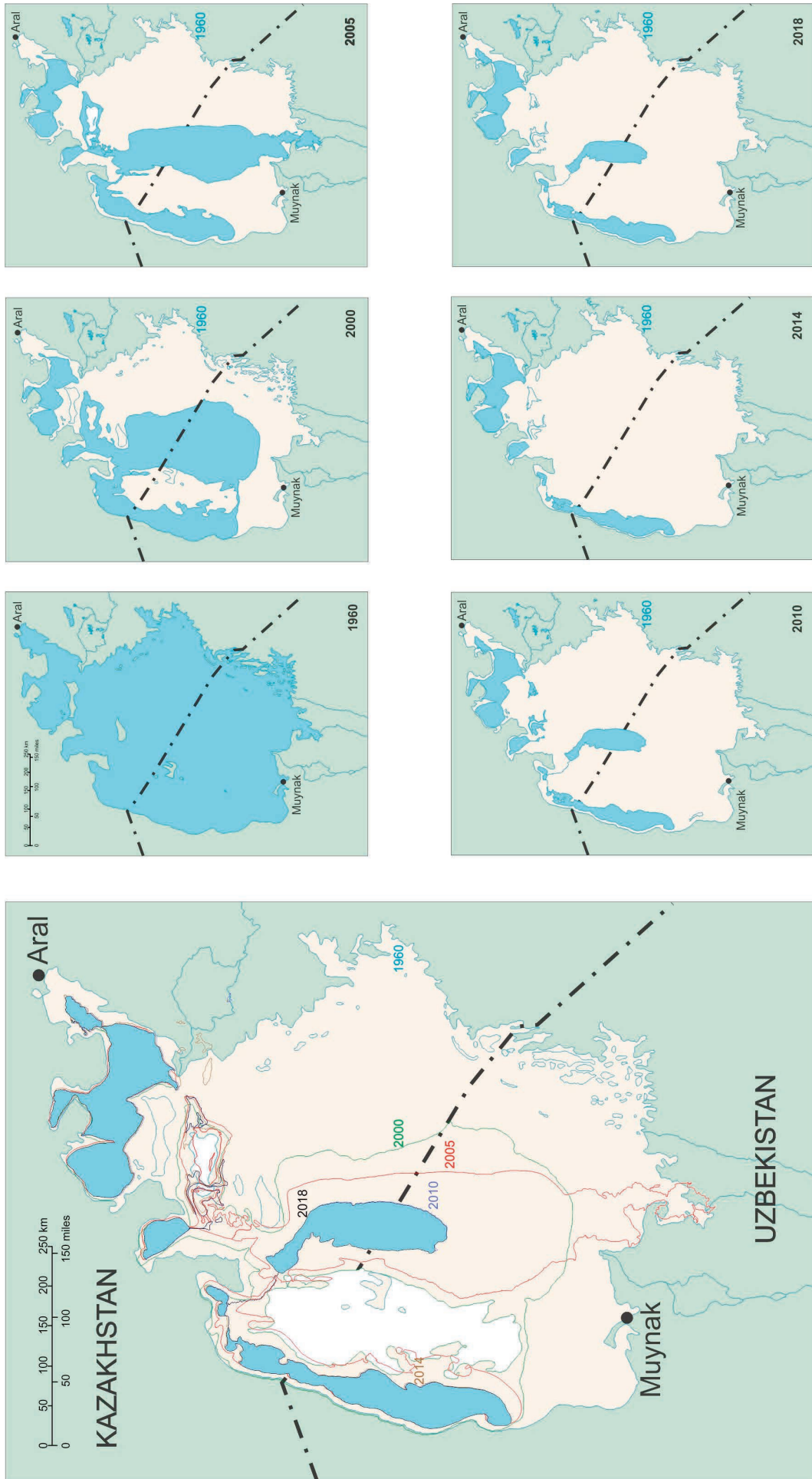
Once the fourth largest lake in the world, the Aral Sea, as a single entity, has disappeared; it has broken into several smaller lakes; in less than 60 years it lost almost 90 per cent of its volume. The landscape has been profoundly modified and the weather conditions in the area have become increasingly inhospitable. The salinization of water and soil has soared. Soil erosion is gradually extending across more and more territory. The collapse of its fishing industry, compromised drinking water and proliferation of dust storms due to the formation of a human-made desert, the Aralkum Desert, are among the consequences.

Despite relevant transboundary cooperation efforts undertaken by the countries of the region, the attention paid by the international community to the disaster and the support channelled to its remediation, and all projects implemented to assist the Aral Sea, the process of disappearance of the Sea has not yet been reversed; it has only slowed down, even though the so called Malyi Aral has been established in Kazakhstan at the outflow of the Syr Darya River and significant work is ongoing in Uzbekistan in the Amu Darya River delta to stabilize important water areas. But overall, the trend will not change unless withdrawals from the Sea's main tributary rivers are significantly reduced.

**Photo 6.3: Dried bed of the Aral Sea**

*Photo credit: Ms. Ana Vukoje*

Map 6.1: Aral Sea, 1960–2018



Source: Prepared by ECE based on NASA images, 2019.  
 Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.



The Central Asian region still does not have a solid overarching legal framework for the management and protection of shared water resources. Only the downstream countries (Kazakhstan, Turkmenistan and Uzbekistan) are parties to the 1992 Water Convention, and only Uzbekistan is a party to the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses. There are, however, several agreements and arrangements among the five countries.

The legal framework for cooperation on the Amu Darya and Syr Darya Rivers was first established through the 1992 Agreement on Cooperation in Joint Management of Use and Protection of Water Resources of Interstate Sources signed by Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. This Agreement is of a general nature and defines the principles of cooperation in the region regarding the use of “water resources of inter-State sources”. Under this Agreement, countries confirmed the principles for water allocation applied in the time of the Soviet Union. However, the Agreement failed to provide the necessary reply to the challenges of a very different reality to that existing when the water allocation principles underlying the Agreement were defined, and its implementation has been widely recognized as inadequate.

Based on the 1998 Agreement between the Governments of Kazakhstan, Kyrgyzstan and Uzbekistan on the Use of Water and Energy Resources of the Syr Darya Basin, protocols were signed annually (from 1999 to 2003) on the use of water and energy resources but implementation of the protocols was often weak. Nevertheless, the Agreement, although much narrower than its predecessors, is exemplary in terms of covering the two main dimensions at stake in the management of transboundary waters in Central Asia – water and energy – among the Syr Darya Basin States. In 2005, with the support of the Asian Development Bank (ADB), a new draft agreement on the Syr Darya was developed to replace the 1998 Agreement, but it was never concluded.

None of the agreements concluded by the five countries properly addresses water quality.

#### Institutional framework for Aral Sea cooperation

After the dissolution of the Soviet Union, a first regional institution was created to control efficient use and protection of the waters and determine annual limits of water use for each State – the Interstate Commission for Water Coordination of Central Asia

(ICWC). In 1993, the Heads of the Central Asian countries signed an agreement that established the International Fund for Saving the Aral Sea (IFAS), aimed at informing the international community about the Sea’s situation and attracting resources for the Aral Sea Basin Programme (ASBP). Since 1999, the ICWC and another regional cooperation body, the Interstate Commission for Sustainable Development (ICSD, established in 1994), were integrated into IFAS.

The Chair of IFAS is assumed by the Heads of State of the Central Asian States on a rotational basis. Strategic directions for IFAS are jointly formulated by the Heads of the five States. Its Board has responsibility to oversee the implementation of the strategic directions. The Executive Committee (EC-IFAS) has the responsibility to operationalize them.

However, the three main entities that comprise IFAS – the ICWC, ICSD and EC-IFAS – to a certain extent, have overlapping mandates, but they operate rather independently of each other. The 1999 Agreement on the Status of IFAS and its Organizations does not regulate the relationships among them. Each organization has its own system of specialized bodies; some of them do not have the desirable geographical scope. The energy sector is not represented in any of those bodies.

#### Uzbekistan’s role as Chair of IFAS

Uzbekistan held the IFAS Chair between 2013 and 2016, when a Third Aral Sea Basin Programme (ASBP-3) was being implemented. The four main directions of the ASBP-3 are: integrated water resources management (IWRM); environmental protection; socioeconomic development; and improving institutional and legal instruments.

Financial contributions for the implementation of the ASBP-3 were higher those for ASBP-1 and ASBP-2. However, most of the projects financed were intended to mitigate the consequences of the disaster and not the disaster itself, with afforestation efforts in the Aralkum Desert being a paradigmatic example of this. Moreover, the portfolio of projects was more composed of national projects than of transboundary projects, giving rise to the insufficient impact they generate.

In 2014, while chairing IFAS, Uzbekistan organized an international conference entitled “Development of cooperation in the Aral Sea Basin to mitigate consequences of the environmental catastrophe”, the main purpose of which was to mobilize the efforts of the international community to carry out practical



actions for improving the environmental and socioeconomic situation in the Aral Sea Basin.

#### Opportunities for subregional cooperation

The weaknesses of subregional cooperation on water are recognized at the political level. The political will to improve the organizational structure and the legal framework of IFAS was expressed in the Joint Statement of the Heads of State of IFAS founders in 2009. Although the Joint Statement provoked a series of discussions on the improvement of subregional water cooperation frameworks, proposed changes have not been implemented.

Central Asian countries have always collaborated within IFAS. From 1992 to the present, there has never been a long-term pause in this cooperation; there were essentially moments of cooling down in cooperation efforts. On the other hand, for many years there were no significant leaps towards more virtuous cooperation, with more expressive results and a more robust legal framework. As at 2019, IFAS continues to work along the strategic and operational directions inscribed in ASBP-3, but it lacks a boost in terms of medium- and long-term policy orientation and, for that very reason, is falling short of the imperative needs imposed by the evolving disaster.

Although Kyrgyzstan decided to temporarily discontinue its participation in IFAS in 2016, in 2017, a new window of opportunities for regional cooperation was opened. Kyrgyzstan and Tajikistan continued to express their intent to build large HPPs, and Uzbekistan expressed its willingness to negotiate the development projects within internationally accepted rules. In 2017, Uzbekistan and Kyrgyzstan signed an MoU on cooperation in the implementation of the Kambarata HPP-1 construction project. In 2018, the summit of the Heads of State of IFAS in Turkmenbashi, Turkmenistan, again discussed the need for reform of IFAS.

#### Bilateral cooperation

In recent years, bilateral cooperation by Uzbekistan has greatly intensified:

- In November 2016, a joint working group of Kazakhstan and Uzbekistan was created to develop proposals for strengthening bilateral water cooperation. The group meets regularly to discuss the use of water in the middle and lower reaches of the Syr Darya River and other transboundary basins;

- In October 2017, the Presidents of Kyrgyzstan and Uzbekistan signed an intergovernmental agreement on inter-State use of Orto-Tokoy (Kasansay) reservoir in Alabukin District of Djalalabad Oblast in Kyrgyzstan. Also, an MoU between the national energy companies was signed on cooperation in implementation of the Kambarata HPP-1 project;
- In 2016, a working group on rational use of water and energy resources was created by Uzbekistan and Tajikistan;
- In March 2018, a working group on IWRM of Central Asian Rivers was established by Uzbekistan and Tajikistan;
- In March 2017, an agreement on cooperation on water management issues between the ministries responsible for water management of Uzbekistan and Turkmenistan was signed;
- In September 2018, the regulation and composition on a joint working group on environmental protection and water quality was agreed by Uzbekistan and Kazakhstan.

#### Dam safety

In the past decade, Uzbekistan continued to participate in the project Dam Safety in Central Asia: Capacity-building for Regional Cooperation, implemented by ECE and the Economic and Social Commission for Asia and the Pacific (ESCAP) in collaboration with EC-IFAS within the framework of the United Nations Special Programme for the Economies of Central Asia (SPECA). The project promotes subregional cooperation for information exchange and notification in the case of accidents or emergency situations involving dams. Uzbekistan is the forerunner in the subregion on the topic of dam safety, so its experts have been actively involved in various technical tasks and training in the project. Uzbekistan has benefited from the development of technical documentation related to dam safety under the project.

Since 2017, as a result of the project, Uzbekistan developed direct cooperation with Tajikistan and Kyrgyzstan on the safety and management of specific hydrotechnical facilities. For example, in March 2018, an intergovernmental Agreement on Cooperation to Ensure the Operation of Farkhad Dam was concluded by Tajikistan and Uzbekistan. The Agreement recognizes the Farkhad HPP as a territory of Tajikistan, while the hydrotechnical facility is recognized as a property of Uzbekistan. Tajikistan committed to ensure protection of the facility, while technical maintenance is to be done by Uzbekistan.

## Cooperation on other environmental issues

### Subregional cooperation

Uzbekistan did not sign the 2006 Framework Convention on Environmental Protection for Sustainable Development in Central Asia, although the country participated in its preparation. The Convention has not entered into force because not all five countries have ratified it.

Events in the framework of subregional cooperation have become much more frequent in recent years, which once again bears witness to the emerging dynamism of Uzbekistan. In 2018, Uzbekistan hosted in Tashkent the Central Asian International Environmental Forum devoted to “Strengthening Cooperation on Environment and Sustainable Development in Central Asia”.

Uzbekistan participates in the subregional cooperation on environmental protection in the framework of the Interstate Commission for Sustainable Development (ICSD).

The first Regional Environmental Action Plan for Central Asia, developed by the ICSD and approved by the IFAS Board in 2003, faced poor implementation. In 2018–2019, following the decision of the 2018 IFAS Board, the ICSD developed the second Regional Environmental Action Plan. The document covers the period 2020–2030. It is structured around the environment-related Sustainable Development Goals and has a strong focus on green economy. Implementation is expected to be financed through budgetary funds and environmental funds of participating Central Asian countries, and donor contributions. As at October 2019, the document was adopted by the ICSD under the title “Regional Environmental Programme for Sustainable Development in Central Asia” and is pending the approval of the IFAS Board.

In October 2019, Uzbekistan assumed the Chair of the ICSD. The Chairperson of SCEEP became the Chairperson of the ICSD. This provides opportunities for the country to increase its contribution to the environmental cooperation agenda in the Central Asia subregion.

### Bilateral cooperation

In 2010, Uzbekistan and Kazakhstan concluded an intergovernmental agreement on the protection, reproduction and sustainable development of saiga (*saiga tatarika tatarika*).

A number of agreements were signed between Uzbekistan and Turkmenistan in 2017, including one between SCEEP and the State Committee on Environmental Protection and Land Resources of Turkmenistan on cooperation on environmental protection and sustainable development.

In early 2019, the Ministry of Energy of Uzbekistan and USAID signed an MoU aimed at implementing projects to improve energy efficiency, promote use of renewable energies and support Uzbekistan’s participation in the Central Asian energy market. There are several examples of ongoing joint projects between the two countries, such as Future Energy, Energy Connections and the Central Asia Regional Electricity Market (CAREM).

## **6.4 International technical assistance on the environment and sustainable development, including in relation to the Aral Sea**

The development of environmental policy and its implementation and enforcement in Uzbekistan has been supported by several donors. As of 2017, a new phase of engagement of donors, including international financial institutions (IFIs), with the country can be observed. The growing partnerships in terms of both the amount of financing and areas of engagement were prompted by the major reforms launched by the Government to move towards a more open and integrated market economic model.

Major donors in the environment and climate change domains in Uzbekistan are Germany, Japan, Switzerland, the United States, EBRD, EU, World Bank, UNDP and ADB. Projects are implemented in the country by OSCE, UNESCO, UNEP, ECE and other organizations.

UNDP’s Country Programme Action Plan (2015–2020) concentrates on technical assistance in support of the objective to balance the effective management of environmental resources with the requirements of continued economic and industrial development. With regard to specific projects, its support has been concentrated on: (i) IWRM and water efficiency; (ii) implementation of the CBD Strategic Plan 2011–2020; (iii) promoting energy efficiency in public buildings; (iv) mainstreaming biodiversity in oil and gas policies and operations; (v) strengthening disaster risk management capacities; (vi) reducing pressures on natural resources from competing land use in non-irrigated arid mountain, semi-desert and desert landscapes; and (vii) implementation of HCFC phase-out. In early 2019, UNDP and GEF, together with SCEEP, agreed to develop and establish a biodiversity conservation information management system.

Almost all financial resources related to UNDP-led projects are derived from GEF. Resources allocated and disbursed by GEF since 2010 are shown in table 6.1. The very small difference between the amounts allocated and the amounts used shows a high capacity for implementation and financial management of projects in and by Uzbekistan.

The World Bank operates primarily through lending rather than subsidies. The World Bank Country Partnership Framework for Uzbekistan 2016–2020 recognizes the more efficient and sustainable use of natural resources, especially energy and water, as both a key challenge and one of the 10 priority areas identified for the country. Increased access to and improvement of the quality of water supply and sanitation services remains an important area of engagement. Improvement of energy security and efficiency and reduction of energy intensity, as well as sustainable agriculture and climate change mitigation, also continue to be among the areas of World Bank intervention. Uzbekistan participates in the Central Asia Energy-Water Development Programme, implemented by the World Bank together with several development organizations to promote energy and water security in Central Asia in the context of a changing global environment.

Since 2010, the World Bank is implementing its Energy Efficiency Facility for Industrial Enterprises Project, which supported the introduction of dedicated credit lines for investment in improving industrial energy efficiency in industrial enterprises. In 2018, the World Bank allocated US\$200 million to these purposes. Small, medium and large industrial enterprises in Uzbekistan will be able to improve energy efficiency and productivity, due to the Project Phase 3 (chapter 15).

The ADB Country Operations Business Plan 2019–2021 for Uzbekistan builds on the current country partnership strategy for Uzbekistan. In the lending pipeline for the period 2019–2021 there is one renewable power project (firm for 2021) and four new projects on water supply and sanitation. Financial

resources programmed for water supply and sanitation amount to US\$645 million.

The EBRD Uzbekistan Country Strategy 2018–2023, approved in 2018, has as one of its three priorities the promotion of green energy and resource solutions across sectors to achieve improved energy and resource efficiency, improved performance and service delivery of municipal infrastructure and increased use of renewable energy.

Within the framework of the new country strategy, the EBRD has approved long-term loans for several infrastructure projects in the areas of water supply and district heating services in Tashkent City and Khorezm and Namangan Oblasts, as well as electricity transmission in Navoiy Oblast.

The EBRD is also responsible for the management of the Environmental Remediation Account for Central Asia (ERA), which was established in 2015 at the initiative of the European Commission and became operational in 2016. ERA's goal is to assist Kyrgyzstan, Tajikistan and Uzbekistan to remediate some of the most dangerous sites left by the past uranium production. The EBRD has concluded a framework agreement with Uzbekistan creating the legal basis for ERA operations in the country.

EU financial and technical assistance to Uzbekistan is based on the Multiannual Indicative Programme 2014–2020 for Uzbekistan, which is in line with the EU Central Asia Strategy for a New Partnership adopted in 2007, and was developed taking into account the Regional Strategy Paper for Assistance to Central Asia for the period 2007–2013. Recent and ongoing EU bilateral cooperation projects in Uzbekistan have focused on a few areas, including energy and environment.

Through the Investment Facility for Central Asia, the EU has supported Uzbekistan in undertaking an investment in the solid waste management system in Samarkand.

**Table 6.1: Global Environment Facility resources for Uzbekistan by focus area, 2010–2018, US\$ million**

Focus areas	GEF-5 allocation	GEF-5 utilization	GEF-6 allocation	GEF-6 utilization	Total resources used
Climate change	12.770	12.769	11.462	11.345	24.115
Land degradation	4.980	4.978	5.121	5.372	10.351
Biodiversity	1.650	1.408	1.784	1.650	3.058
<b>Total</b>	<b>19.400</b>	<b>19.156</b>	<b>18.367</b>	<b>18.367</b>	<b>37.524</b>

Source: [www.thegef.org/country/uzbekistan](http://www.thegef.org/country/uzbekistan).

In early 2019, a negotiation process on the draft agreement on expanded partnership and cooperation between Uzbekistan and the EU was launched.

In 2018, the first two European Investment Bank loans to support water infrastructure and energy efficiency in Uzbekistan were approved. A €100 million loan devoted to the financing of water and wastewater projects within the framework of the EU-sponsored Climate Action and Environment Facility will contribute to addressing Uzbekistan's high external water dependency and the scarcity of locally available freshwater resources. The other loan, also amounting to €100 million, will finance a credit line that will support energy-efficiency investments of SMEs, mid-cap companies and private sector entities in Uzbekistan. The start of European Investment Bank operations in Uzbekistan is a clear sign of increased EU support for the country.

UNESCO has promoted awareness-building activities in Uzbekistan to stimulate knowledge and innovation for sustainable management and conservation of freshwater resources and to strengthen institutional capacities for water security.

Germany's cooperation with Uzbekistan has materialized in support of many projects in different environmental domains, such as transboundary water management, drinking water supply, adaptation to climate change, cross-border cooperation on disaster prevention, reduction of GHG emissions and sustainable use of natural resources. In late 2016, an agreement was signed between the Government of Uzbekistan and the Government of Germany on technical cooperation for the implementation of the project "Land use based on ecosystem approach and conservation of the ecosystems in the lower course of the Amu Darya River". The Agreement provides for technical assistance to climate change adaptation.

Water and sanitation are also at the core of the technical assistance provided by Switzerland to Uzbekistan – mostly through partnering with IFIs in water supply and water management projects such as the Regional Rural Water Supply and Sanitation Project in Fergana Valley and the Bukhara–Samarkand Water Supply project.

Japan's technical assistance has been more devoted to the energy sector and its greening.

USAID has been active in Uzbekistan through regional and bilateral projects on water management. "Smart Waters" is a good example of such cooperation. Funded by USAID in Central Asian countries and Afghanistan, the project has been implemented by CAREC since 2015. CAREC established a partnership with the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers within this project and training on the implementation of IWRM has been organized.

## 6.5 Participation in non-binding processes related to the environment and sustainable development

### *10-Year Framework of Programmes on Sustainable Consumption and Production Patterns*

SCEEP is the National Focal Point for the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (10YFP) and a member of the 10YFP in the Global SCP Clearinghouse, although the country has not been very active in the activities developed under the 10YFP, including the surveys. The current stand of Uzbekistan vis-à-vis target 12.1 of the 2030 Agenda for Sustainable Development is described in box 6.6.

#### Box 6.6: Target 12.1 of the 2030 Agenda for Sustainable Development



#### **Goal 12: Ensure sustainable consumption and production patterns**

#### **Target 12.1: Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries**

Uzbekistan has nationalized the global target 12.1 and its indicator 12.1.1 without significant modifications.

In Uzbekistan, there is no national strategy or action plan on sustainable consumption and production (SCP) specifically, nor a national strategy or action plan for green economy, green growth, resource efficiency or circular economy addressing SCP as one of the main themes.

However, Uzbekistan has integrated objectives relevant to SCP in some policies devoted to the environment and, in recent years, SCP-related objectives have started to be mainstreamed in sectoral policies, such as agriculture and energy. Although references to SCP are not explicit in the Action Strategy on Five Priority Directions for Development for the period 2017–2021, several of its objectives are clearly aligned with SCP.



*Forest-related processes*

Uzbekistan participates in activities of the United Nations Forum on Forests (UNFF), although the country did not participate in the reporting cycles under UNFF.

Uzbekistan has been cooperating closely with FAO and ECE on forest issues. In 2018, with the support of these two organizations, the country worked on a set of national criteria and indicators for sustainable forest management. Having a functional forest reporting system is the main and ultimate goal of Uzbekistan. This will be instrumental in monitoring forests and informing decision-making but also in Uzbekistan's continuing to contribute to the Global Forest Resources Assessment.

In 2018, in support of the Bonn Challenge, Uzbekistan committed to restore 0.5 million ha of degraded land by 2030.

With FAO, Uzbekistan developed a project proposal for carrying out a national forest inventory (the last inventory dates back to 1987); as at early 2019, it is looking for additional sources of financing for it.

*Environment for Europe process*

Uzbekistan submitted several voluntary commitments under the two initiatives endorsed by the ministers at the Eighth Environment for Europe Ministerial Conference (Batumi, Georgia, 2016): the Batumi Initiative on Green Economy and the Batumi Action for Cleaner Air.

Batumi Initiative on Green Economy

Under the Batumi Initiative on Green Economy, Uzbekistan submitted five commitments: (i) adopting a law on alternative energy sources by 2018 to assist the further development of scientific research in the field of alternative energy sources with the aim to improve rational use and saving of energy resources; (ii) reforming, by 2018, existing laws that regulate methods of the use of natural resources, with the purpose of improving the system of incentives for pollution reduction, recycling and disposal of waste, and the development of industries using recycled materials; (iii) developing and adopting a government decision in 2017 on the introduction of an eco-labelling system and joining the Global Ecolabelling Network; (iv) developing, by 2018, a strategy for MSW management aimed at the reduction of the volume of MSW generated and the introduction of a closed cycle of production and consumption; (v) constructing solar power plants with the capacity of

100 MW in Samarkand and Navoiy Oblasts by 2020. Progress has been made over the past two years in relation to almost all commitments. The Law on the Use of Renewable Energy Sources was adopted in 2019 (chapter 12).

The public policy for rational use of natural resources was for many years based mainly on the system of payments for pollution stipulated in the 2003 Resolution of the Cabinet of Ministers No. 199 (no longer in force). In 2018, a set of measures to improve economic mechanisms for the protection of the environment was established through the 2018 Resolution of the Cabinet of Ministers No. 820. Although these new measures do not represent a radical change in the pattern of pollution payments, they nevertheless constitute a step in the right direction, since pollution payment rates are now indexed on the official monthly minimum wage and therefore adjusted for inflation (chapter 3).

Advances in an eco-labelling system for products and services were made. The regulation on the procedure of eco-labelling was adopted (2019 Resolution of the Cabinet of Ministers No. 435) but it is too early to assess its implementation. The country has not yet become a member of the Global Ecolabelling Network.

The country evolved significantly in the area of urban solid waste, having adopted the Strategy on Municipal Solid Waste Management for the period 2019–2028, which sets ambitious objectives for the coming 10 years (chapter 10).

Batumi Action for Cleaner Air

Within the framework of the Batumi Action for Cleaner Air, the following four commitments were submitted: (i) to adopt, by 2019, the amended Law on Ambient Air Protection, taking into account the newly introduced provisions and norms of international conventions and agreements; (ii) to introduce automated control systems at air pollutants emission sources on major industrial installations by 2020; (iii) improvement of import and export regulations for ODSs and products containing ODSs; and (iv) gradual introduction of environmental standards Euro-3 to Euro-5 in accordance with current international standards.

Although the Law on Ambient Air Protection was amended in 2018, the amendments do not cover the strengthening of emission standards for large combustion plants – such amendments are still in the pipeline for adoption. The improvement of import and export regulations for ODSs and products containing

ODSs was fulfilled as assumed in the Batumi commitment. Within the improvement of the monitoring system of air pollutants, the installation of automated control systems in major industrial facilities has not yet materialized. Similarly, work is ongoing to improve the regulatory framework to ensure the gradual introduction of environmental standards Euro-3 to Euro-5 for fuel and vehicles (chapter 8).

#### *EU–Central Asia Working Group on Environment and Climate Change*

Uzbekistan is engaged in the EU–Central Asia Working Group on Environment and Climate Change, chaired by Italy, which has provided a platform for discussion of progress in cooperation on the environment, climate change and water among high representatives of five Central Asian countries, the EU, IFIs, international and regional organizations and NGOs. As part of this work, Uzbekistan acquired expertise on how to improve access to the Green Climate Fund, IFIs, the EU Investment Facility for Central Asia and bilateral programmes funding projects on the environment, with a focus on waste and water management, as well as energy and climate action.

## **6.6 Legal, policy and institutional framework**

### *Legal framework*

The conclusion, execution, suspension and termination of international agreements is regulated by the 2019 Law on Treaties. The preparatory process preceding the conclusion of treaties involves coordination with the Ministry of Foreign Affairs, the Ministry of Justice and other ministries and central government bodies concerned. A feasibility study is always done during the preparatory process. The conclusion of a treaty requires approval by the President. The international agreements that Uzbekistan ratifies or accedes to do apply directly in Uzbekistan and have primacy over conflicting provisions of the domestic legislation.

### *Policy framework*

The main document establishing the policy framework in the country – the Action Strategy on Five Priority Directions for Development for the period 2017–2021 (chapter 1) – emphasizes expanding international cooperation and the strengthening of the international image of Uzbekistan among priority directions for development.

Priorities for international cooperation on the environment are defined in the Concept on Environmental Protection until 2030 (2019 Decree of the President No. 5863), adopted in October 2019. These include: approval of a national programme for implementation of the Montreal Protocol; development of a national action plan for implementation of the Paris Agreement; building effective long-term partnerships with IFIs and donor countries; and improving the preparation of investment projects and international technical assistance projects. Another priority is to study the feasibility of Uzbekistan’s accession to several multilateral environmental agreements (MEAs), including the four ECE conventions and protocols thereto, the Kigali Amendment to the Montreal Protocol, and the Minamata and Rotterdam Conventions.

Among priorities for bilateral cooperation the Concept names: the development of cooperation to reduce the risks of exposure to chemical and radiological materials; conducting joint EIAs for facilities located in border areas; designation of transboundary protected areas; and transboundary basin management.

### *Institutional framework*

In 2017, the State Committee for Nature Protection was converted into the State Committee on Ecology and Environmental Protection (SCEEP). Several new sectoral ministries were created in the period 2017–2019, including the Ministry of Housing and Communal Utilities, the Ministry of Energy and the Ministry of Transport. As these changes are recent, the internal reorganization and adjustments within each of the authorities will take time, including with regard to responsibilities for international cooperation.

SCEEP, Uzhydromet and the Ministry of Water Management are the most relevant executing agencies with regard to the MEAs to which Uzbekistan is a party.

Currently, the institutional framework is very fragile in several respects, the first of which lies in the total lack of articulation among the different ministries and state committees in the field of environmental policy. The exchange of information is scarce. In addition, no entity, not even SCEEP, has a firm knowledge of which institutions are responsible for international environmental dossiers, including MEAs, when they are not directly responsible. It is even more surprising that this is so when all the ministries most directly involved in MEAs have an international cooperation department, the primary function of which is to

coordinate and support the other departments in the exercise of their international cooperation competences.

A second aspect is the high turnover of those responsible for the MEAs, especially in SCEEP, without transitional arrangements during managerial change that guarantee that relevant information moves from the outgoing person responsible to the new one. Not all focal points for MEAs are well aware of their roles and responsibilities and this also derives from the failure to ensure proper transition between outgoing focal points and new ones.

Many of the convention secretariats have inaccurate or incorrect information on the focal points designated by Uzbekistan. In some cases, the focal point is no longer even exercising the functions that would be the source of its designation as a focal point. Many of the focal points indicated by the country during the review mission for the preparation of this report were not those that were officially designated by the country to the convention secretariats. This discrepancy has at least one inevitable consequence – the information sent by the secretariats of the conventions is addressed to those who no longer need it, which does not benefit the country.

Almost all national reports and communications prepared by the country are done with the technical support of international agencies and, in some cases, it is clear that not much knowledge remains in the public administration as a result of that work. Many of the focal points work alone on an international agreement for which they are specifically responsible. This situation is not conducive to building sufficient capacities in the administration on the issues involved and undermines the possibility of gaining expertise with the technical assistance received.

#### *Coordination with donors*

Some donor coordination efforts were undertaken by UNDP through the United Nations Country Team. The Office of the United Nations Resident Coordinator has recently been established in Uzbekistan. The United Nations Development Assistance Framework for

2016–2020 for Uzbekistan foresees the strengthening of coordination mechanisms. A promising example of Government–donor coordination is the recent establishment of the Multi-Partner Human Security Trust Fund for the Aral Sea Region (box 6.7).

The EU has also frequently pursued coordination with donors, mainly those that support initiatives and projects in similar areas to those of the EU in Uzbekistan, namely, Germany, Israel, Switzerland, the United States, the United Nations system, the World Bank and the ADB.

There is no platform for overall coordination between donors and public institutions and comprehensive information on official development assistance (ODA) is not available. Therefore, donor coordination on the environment is not covered by any formal or stable mechanism.

There are different interlocutors for different donors. The principal interlocutor of the EU is the Ministry of Foreign Affairs. The Ministry of Finance used to act as the main interlocutor for several donors, such as the World Bank and the ADB, but, in recent years, direct contacts between donors and line ministries have been increasing. Progressively, public institutions, especially those in central government, establish their own coordination meetings with donors active in their domains.

The overall objective of the Project “Aid Coordination and Management”, launched by UNDP in June 2013, was to improve the effectiveness of aid flowing into Uzbekistan in the long term, and to strengthen the capacities of relevant government institutions to better coordinate, manage and mobilize external resources. None of the three expected results – development and implementation of a partnership agreement between the Government and development partners; improvement of aid effectiveness at a sector level, through enhanced capacity in the formulation and management of project portfolios; and establishment of an aid information management system to allow recording, financial and thematic tracking and results monitoring of projects and programmes – were fully achieved.

#### **Box 6.7: Multi-Partner Human Security Trust Fund for the Aral Sea region**

The Multi-Partner Human Security Trust Fund for the Aral Sea Region, initiated by the President of Uzbekistan, was endorsed in 2018 by the United Nations General Assembly through the Resolution “Strengthening regional and international cooperation to ensure peace, stability and sustainable development in the Central Asian Region” (A/RES/72/283).

The Trust Fund is an unprecedented attempt to better coordinate donor aid to the Aral Sea region of Uzbekistan and increase the effectiveness and impact of government and donor projects in the Aral Sea region of the country. Contributions to the Fund are made by bilateral and multilateral donors and the Government of Uzbekistan. The Fund is administered by a Steering Committee co-chaired by the United Nations Resident Coordinator in Uzbekistan. In March 2019, the first call for proposals was issued.

Despite the foregoing, there are projects that are co-financed by two or more donors, and there are donor-supported projects that are complementary to one another. This is especially so because some donors trigger coordination with others and articulate the projects they will fund with interventions from other donors.

## 6.7 Assessment, conclusions and recommendations

### *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

### 7.1 Current and foreseeable environmental and economic impacts from climate change

#### *Environmental impacts from climate change*

##### Climate

The climate of Uzbekistan is continental and subtropical, and characterized by significant daily and seasonal fluctuations, with maximum temperatures in summer exceeding 45°C and minimum temperatures in winter dropping well below -20°C.

Overall, weather conditions in the country are expected to become hotter and drier, with more frequent and more intense heatwaves, droughts and modifications in precipitations patterns leading to an increase of related extreme weather events such as heavy rains, floods and mudflows.

##### Precipitation

Uzbekistan can be considered an arid country, with precipitation highly influenced by the variability of the geographical characteristics of the terrain, with the most precipitation being received by mountainous areas in the south-eastern and eastern part of the country.

According to the 2016 Third National Communication (TNC) to the United Nations Framework Convention on Climate Change (UNFCCC), from 1900 to 2013, no significant trend can be ascertained in respect of variation in total annual precipitation. Climate change is expected to contribute to an overall decrease in precipitation, except for mountain areas during the winter months, where a slight increase in overall precipitation is expected. Despite the overall tendency towards a decrease in precipitation, changes in precipitation patterns are expected to contribute to more frequent extreme weather events such as heavy rain events.

##### Temperature

According to the TNC, climate change is already having tangible impacts on temperature in the country. From 1950 to 2013, the registered rate of temperature increase corresponded to 0.27°C for every 10 years, a rate of warming more than double the global trend. The increase in temperature was registered during both the summer and winter seasons and corresponds to a marked decrease in the number of frost days and to an increase in the number of days with maximum air temperature exceeding 40°C. The most significant warming trend has been recorded in the northern parts of the country and in the urban centres, with warming in the mountainous areas being less pronounced, while still exceeding the global rate. An increase in the number of tropical nights<sup>19</sup> has also been registered in the whole country, with the strongest trend registered on the plains. According to the scenarios considered under the TNC, it is expected that the increasing trend in average annual temperature will continue. Seasonally, the strongest increase in temperature is expected to occur during the summer months.

##### Water resources

Uzbekistan is a country characterized by water scarcity, and this issue is expected to be further exacerbated by climate change and increased water demand due to a growing population and expected changes in the distribution of surface water resources in the Aral Sea Basin. The water resources of the country are comprised of the surface resources of the Amu Darya, Syr Darya and other rivers of the Aral Sea Basin. Only around 10 per cent of the water resources are comprised of groundwater.

Shrinkage of glaciers has been recorded on the territory of Uzbekistan. According to the TNC, in the period 1957–2010, the total volume of ice in glaciers was reduced by 24.3 per cent in the Pskem River Basin, by 67.4 per cent in the Kashkadarya River Basin and by 40.1 per cent in the Surkandarya River Basin. According to analysis contained in the TNC, a decrease in glacier area can be expected under all

<sup>19</sup> The definition of tropical night adopted by the TNC refers to nights with a temperature above 22°C, due to the lower humidity in the country.

scenarios developed, with glaciers projected to disappear from the territory of the country in the next 30 to 50 years under the extreme GHG emissions scenario. Analysis of snow cover data presented in the TNC shows a decrease in snow cover area in all scenarios considered. The run-off of the Amu Darya and Syr Darya Rivers is characterized by strong inter-annual variability, which might be further exacerbated by climate change with changes in precipitation patterns.

Climate change is expected to have impacts on water quality as well, in particular in terms of salinization. This is especially problematic considering that only 73 per cent of the population nationwide has access to centralized water supply (figure 9.3). Around 20 per cent of the population of Uzbekistan is already subjected to the effects of water salinization.

The projected decrease in water availability is a serious issue that is expected to impact on many sectors of the economy, as well as human health.

#### Land and soil

Erosion and salinization are two particular issues affecting the quality of soil in the country that are expected to be exacerbated by climate change. According to some estimates, over 50 per cent of cultivated land in the country is affected by wind erosion, and almost 20 per cent is affected by water erosion. Salinization – with varying degrees of soil salinity – affects around 50 per cent of cultivated land, a percentage that climbs to over 90 per cent in certain areas of the country such as the Republic of Karakalpakstan.<sup>20</sup> Variations in precipitation patterns in the country are expected to contribute to an increase in the incidence in mudflows, which in turn are expected to have negative impacts on soil quality.

Climate change is expected to have a negative effect on the quality of soils in the country, contributing to land degradation and desertification.

#### Forests

Forests account for 3.26 million ha (7.26 per cent of the country's territory) as at 1 January 2018. The forest cover in Uzbekistan can be divided into desert plains forests, accounting for almost 80 per cent of all forest cover, floodplain and riparian forests (so-called tugai forests) and mountain forests. The most prevalent tree species in the country are desert trees

and shrubs such as saxaul, cherkez, kandym and other types of desertic vegetation. Forests have an important role in preventing erosion in mountain areas, fixing sandy terrain in desert areas, providing non-timber forest products and mitigating desert storms.

In recent years, there has been a decrease in floodplain and riparian forest habitats, due to changes in hydrological phenomena. Mountain forests are very diverse, with more than 100 species of trees and shrubs found in these areas. The most prevalent are juniper, pistachio, almond, other nuts, apple and hawthorn. Overall, forests in Uzbekistan are characterized by low productivity, with the exception of tugai forests. Climate change is expected to have a negative impact on forests in the country, in particular by further decreasing productivity of species such as saxaul and increasing the risk of spreading insect pests and forest pathogens.

Additionally, it is expected that climate change will have a negative impact on the health of forests, including a higher incidence of outbreaks of insect pests and forest pathogens. 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, resulting in further reduction.

#### Biodiversity

Climate change is expected to have a negative impact on biodiversity, in particular through its effects on the intensification of land degradation and desertification. According to the 2019 Sixth National Report to the CBD, aquatic habitats are especially endangered, due to negative consequences associated with the rise in water temperature and increase in salinity. An upward shift of certain habitats can be expected as a result of climate change, with the consequent reduction of the area of alpine and sub-alpine belts expected to negatively influence all species, in particular, large vertebrates. The negative effects of climate change on biodiversity are expected to be especially pronounced in the Aral Sea region and in sub-montane regions of Uzbekistan.

According to the Sixth National Report, some negative effects of climate change on biodiversity can already be identified. In particular, there are upward shifts of heat-loving plants, and changes in migratory patterns of some bird species.

<sup>20</sup> Aden Aw-Hassan and others, "Economics of land degradation and improvement in Uzbekistan", in *Economics of Land Degradation and Improvement – A*

*Global Assessment for Sustainable Development*, Ephraim Nkonya, Alisher Mirzabaev and Joachim von Braun, eds. (Springer, 2016).



### Human health

Climate change is expected to have negative impacts on human health in Uzbekistan, in particular regarding health risks associated with high temperatures and inadequate water quality.

Climate change will lead to an increase in temperature, leading to an increase in the incidence of dehydration and heat stroke, especially in the central desert areas. Higher temperatures are also expected to lead to an increase in the incidence of cardiovascular, neurological, genitourinary, gastrointestinal and neoplastic diseases.

Higher temperatures are expected to increase the incidence of diarrhoeal diseases in the country. According to expert assessments, an increase of 1°C–2°C in maximum temperature is directly associated with an increase of 10–13 per cent in the incidence of acute intestinal infections.<sup>21</sup> Climate change is also expected to increase the risk of vector-borne diseases such as malaria. Water-supply-related issues aggravated by climate change are expected to lead to increased risk of infectious waterborne diseases and malnutrition.

Climate change is also expected to aggravate the incidence of respiratory diseases related to dust-storms, in particular in the Aral Sea region. Dust storms are already a serious health concern in the

country, with WHO estimates assessing the number of affected people at more than 5.5 million. While it is difficult to establish the exact contribution of the changing climate to this number, increasingly arid conditions are certain to have exacerbated the phenomenon.

### *Economic impacts from climate change by sector*

#### Energy

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. While climate change is also expected to cause a slight decrease in energy demand for heating purposes, this decrease will not be significant enough to counterbalance the increase in demand for cooling purposes, resulting in an overall increase.

Climate change is also expected to have an influence on energy production. Hydropower, which accounted, on average, for 11.17 per cent of in-country electricity generation in the period 2013–2018 (table 12.5(b)), is expected to be negatively influenced by climate change in terms of productivity, as a result of changes in water availability. At the same time, the country's estimated technical potential for solar energy development is significant: 2,058,000 Gw/y (table 12.10).

### **Photo 7: Urban sprawl, Bukhara City**



*Photo credit:* Ms. Alessandra Fidanza

<sup>21</sup> Bettina Menne, Vladimir Kendrovski and James Creswick, “Protecting health from climate change: A seven-

country approach”, *Public Health Panorama*, vol. 1, No. 1 (June 2015), p. 11–24.

Energy generation and transmission infrastructure, while in the process of being modernized, can still be considered generally vulnerable to weather conditions, and climate change can be expected to exacerbate this vulnerability.

### Industry

No assessment of the impacts of anthropogenic climate change on the industrial sector in the country has been developed. It can be expected that climate change could have negative effects on related infrastructure.

### Agriculture

In 2018, the agriculture, forestry and fisheries sector accounted for 32.4 per cent of GDP (table 13.1). In 2018, agriculture accounted for about 90 per cent of the total water use (table 9.2). Almost 95 per cent of the cultivated area has to make use of irrigation for crop growing. The most prevalent crops in Uzbekistan are cotton and wheat, both of which are sensitive to changes in climatic conditions.

Some climate change impacts can already be felt in the sector. According to the TNC, there has already been a marked increase in the length of the vegetation period. While a longer vegetation period has a positive impact on yield productivity for crops such as cotton, it has been accompanied by an increase in the frequency of droughts. Climate change is expected to have serious negative impacts on the sector, with aggravated water scarcity being the greatest threat. Climate change is expected to lead to an increase in the demand of water for irrigation, in an overall condition of decreased water availability in the country. Changing climate is expected to have a negative impact on both crop and livestock productivity, with concerns for food security.

### Transport

Climate change is expected to have a negative impact on the transport sector, with the higher frequency and intensity of extreme weather events, particularly flooding and mudflows, expected to negatively affect transport infrastructure in the country. Higher temperatures and protracted heatwaves can also be expected to lead to accelerated deterioration of transport infrastructure.

### Tourism

Tourism is a sector of growing importance for Uzbekistan. In 2018, tourism was estimated to have

contributed 3.4 per cent of GDP, with 380,400 jobs directly and indirectly supported by the sector.

There is limited awareness of the impacts of climate change on the sector and current impacts have not yet been assessed. Climate change is expected to have a negative impact on the sector, with higher temperatures and extreme weather events having impacts on sites of historical and cultural significance, as well as on natural sites. The higher incidence of heatwaves in the summer months might result in a decrease in tourist demand.

### Health-care systems

The assessment conducted by the WHO Regional Office for Europe in 2018 (chapter 17) demonstrated that the implementation of measures to reduce domestic carbon emissions pledged in the (Intended) Nationally Determined Contribution (INDC) of Uzbekistan would bring the annual economic benefits from reduced PM<sub>2.5</sub> emissions and associated mortality and morbidity in the amount of US\$668 million (in 2005 prices) in 2030 and thereafter.

### *Costs of inaction*

Despite the economic impact that climate change is expected to have on various economic sectors in the country, in particular on agriculture, costs of inaction for the different sectors have not been estimated. Considering the high sensitivity to climate change of economic sectors of the country, as well as the vulnerability of the country to extreme weather events, not taking necessary adaptation measures is expected to result in significant costs in the future.

### *Resources for climate change mitigation and adaptation*

Uzbekistan has been very successful in mobilizing international climate finance sources in the past years. According to a study by the OECD, Uzbekistan has managed to mobilize more than US\$1 billion a year in the period 2013–2014 from bilateral donors and multilateral channels. Most of the mobilized funds focused on mitigation measures in the energy sector, with significant resources focusing on adaptation measures in the agriculture sector.

Uzbekistan has also dedicated significant domestic resources to climate-related measures, in particular for mitigation measures in the energy sector. The state-owned electricity system operator, Uzbekenergo, dedicated US\$5 billion between 2011 and 2015 to energy efficiency measures and other measures related to energy sector infrastructure.

## 7.2 Greenhouse gas emissions from economic sectors

Uzbekistan is a non-annex I party to the UNFCCC, and has submitted, to date, three national communications to the UNFCCC, including inventories of GHG emissions. The latest data, contained in the TNC, issued in 2016 and submitted in 2017, are updated to 2012. The inventory presented under the TNC includes data on emissions and sinks of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and HFCs, as well as of CO, NO<sub>x</sub>, non-methane volatile organic compounds (NMVOCs) and SO<sub>2</sub>. A new GHG inventory will be compiled in 2020–2021.

The inventory does not include data on sulfur hexafluoride (SF<sub>6</sub>) and perfluorocarbons (PCFs) due to the lack of relevant data.

According to the TNC, in 2012, GHG emissions per capita in the country were 6.9 t of CO<sub>2</sub>-eq., while total emissions, excluding land use change and forestry

(LUCF) sinks were 205.2 Mt CO<sub>2</sub>-eq. (table 7.1). In comparison with 1990, there has been a 13.7 per cent increase in overall emissions and a 21.6 per cent decrease in emissions per capita. In 2012, the energy sector accounted for 82 per cent of emissions (excluding LUCF removals) for a total of 168.1 Mt of CO<sub>2</sub>-eq., and, as such, was the greatest contributor to the country's GHG emissions. The second biggest contribution to GHG emissions comes from the agricultural sector, accounting for 11 per cent of the emissions in 2012, followed by industrial processes and waste treatment, both accounting for slightly less than 8 per cent of the total GHG emissions of the country.

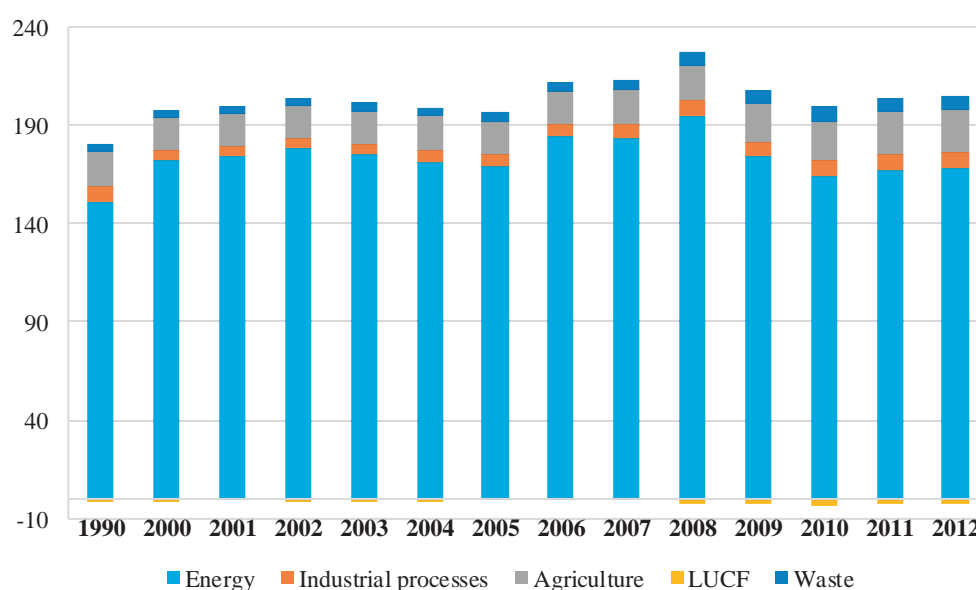
Figure 7.1 illustrates the fluctuation and GHG emission trends by sector in Mt of CO<sub>2</sub>-eq. The historical trend of the 22-year period from 1990 to 2012 appears substantially stable, with a gentle, steady increase in emissions, which are being consistently dominated by the energy sector.

**Table 7.1: GHG emissions and removals by sector, 1990, 1995, 2000, 2005, 2010, 2012, Mt CO<sub>2</sub>-eq.**

	1990	1995	2000	2005	2010	2012
Energy	151.2	157.9	172.4	169.2	164.1	168.1
Industrial processes	8.1	5.3	4.9	6.2	7.9	7.8
Agriculture	17	16.7	16.2	16.1	19.9	21.6
LUCF	-1.6	-1.4	-1	0.4	-3.1	-2.9
Waste	4.1	4.3	4.5	4.7	7.3	7.7
<b>Total (including LUCF removals)</b>	<b>178.8</b>	<b>182.8</b>	<b>197</b>	<b>196.6</b>	<b>196.1</b>	<b>202.3</b>
<b>Total (excluding LUCF removals)</b>	<b>180.4</b>	<b>184.2</b>	<b>198</b>	<b>196.2</b>	<b>199.2</b>	<b>205.2</b>

Source: Third National Communication to the UNFCCC, 2016.

**Figure 7.1: Total GHG emissions by sector, 1990, 2000–2012, Mt of CO<sub>2</sub>-eq.**



Source: Third National Communication to the UNFCCC, 2016.

In 2012, CO<sub>2</sub> emissions accounted for 51 per cent of the overall GHG emissions of the country. Historically, they have accounted for about half the total emissions since 1990 (figure 7.2). CH<sub>4</sub> emissions increased substantially, from 30 per cent of total emissions in 1990 to 43 per cent of total emissions in 2012 (converted to CO<sub>2</sub>-eq.). The third most represented GHG is N<sub>2</sub>O, accounting for 5 per cent of total emissions in 2012. In addition to this, the GHG inventory reports negligible quantities of emissions from HFCs (less than 0.1 per cent of the total emissions when converted to CO<sub>2</sub>-eq.).

### Energy

Energy is the highest emitting sector in the country, emitting 168.1 Mt CO<sub>2</sub>-eq. in 2012 and thus accounting for 82 per cent of total GHG emissions of the country (excluding LUCF removals). The contribution of the sector to overall emissions has increased slightly over the years, with an increase of 11.2 per cent in 2012 compared with 1990. Approximately 75–80 per cent of the electricity in Uzbekistan is produced using natural gas produced in Uzbekistan.

Within the energy sector, most emissions come from fuel combustion, accounting for 58 per cent of emissions in 2012, whereas the remaining 42 per cent is due to fugitive emissions. The fuel combustion category includes fuel combustion by energy industries and by manufacturing and construction industries and fuel combustion for transport. On the other hand, the “fugitive emissions” category includes fugitive emissions due to coal mining and processing, and fugitive emissions in the oil and gas sector. It is worth noting that GHG emissions from methane leakage alone account for more than 68.237 Mt CO<sub>2</sub>-eq. per year in 2012, with an increasing trend from

43.628 Mt CO<sub>2</sub>-eq. per year in 1990. Methane leakage is a significant issue for the country. Despite the fact that many project interventions, including those financed under the Clean Development Mechanism (CDM), have sought to address the issue, it is a growing source of emissions in the country, with its contribution to overall emissions having increased from 22.9 per cent in 1990 to 33.2 per cent in 2012 (figure 7.3).

### Industry and mining

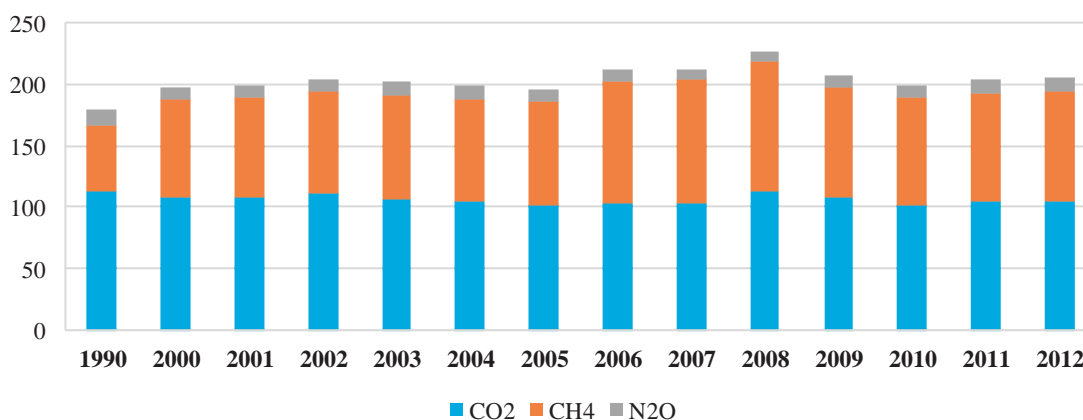
GHG emissions from industrial processes in the country originate mainly from the chemicals industry and construction materials industry. The chemicals industry accounted for 46 per cent of total emissions of the sector in 2012, the mineral products industry accounted for 38 per cent and the metal production industry accounted for 15 per cent (figure 7.4).

The majority of GHG emissions related to the mineral products industry are connected with cement production, while other sources of emissions in this category include lime production and the use of soda ash.

More than 99 per cent of emissions from the chemicals industry are due to the production of ammonia (49 per cent of related emissions) and nitric acid (50.3 per cent of related emissions).

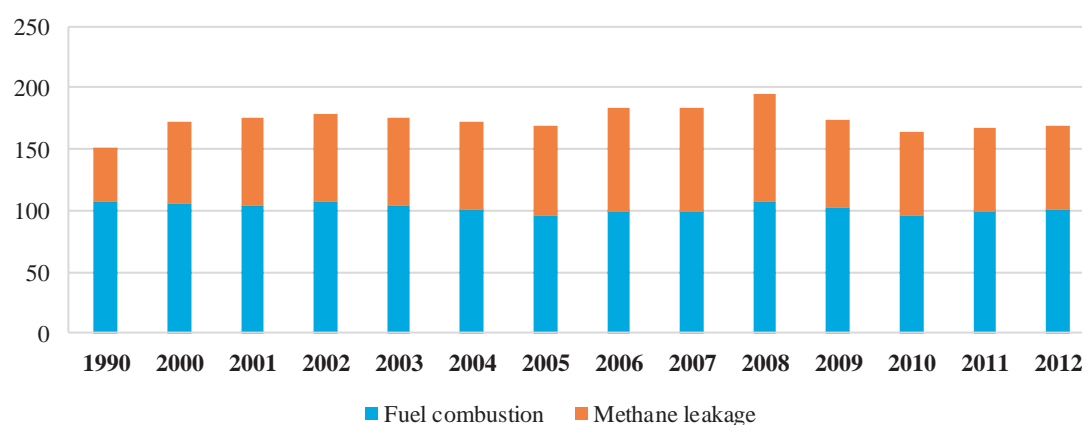
If subdivided by gas, 76 per cent of GHG emissions of the sector in 2012 were CO<sub>2</sub>, with N<sub>2</sub>O the second highest contributor with 23 per cent and HFCs contributing a modest 1.2 per cent. CH<sub>4</sub> emissions in the industrial sector are negligible – less than 0.05 per cent (table 15.5). The sector’s contribution to overall emissions has decreased slightly over the years, by 3.7 per cent between 1990 and 2012.

**Figure 7.2: Total GHG emissions by gas, 1990, 2000–2012, Mt of CO<sub>2</sub>-eq.**

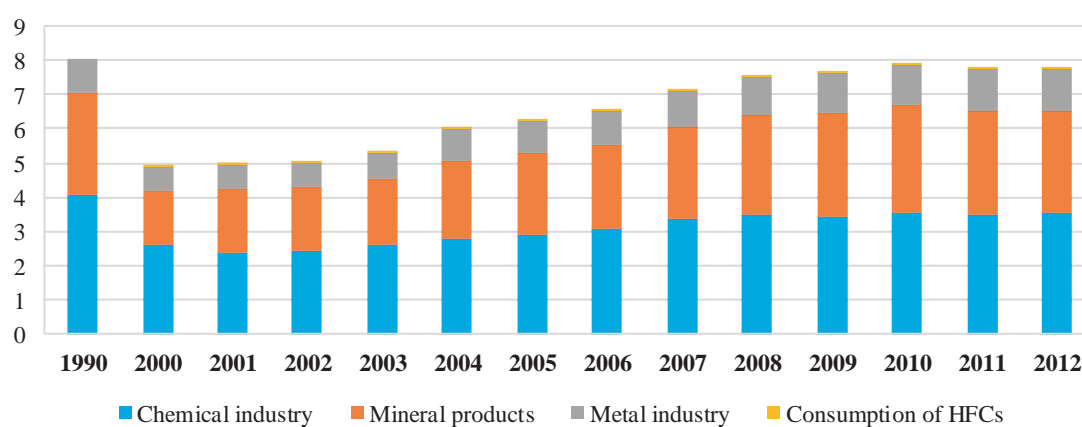


Source: Third National Communication to the UNFCCC, 2016.



**Figure 7.3: GHG emissions from the energy sector, 1990, 2000–2012, Mt CO<sub>2</sub>-eq.**

Source: Third National Communication to the UNFCCC, 2016.

**Figure 7.4: GHG emissions from the industrial sector, 1990, 2000–2012, Mt CO<sub>2</sub>-eq.**

Source: Third National Communication to the UNFCCC, 2016.

### *Agriculture*

GHG emissions in the agriculture sector accounted for 10.5 per cent of total emissions in 2012 excluding LUCF. The overall contribution of the sector to total emissions increased by 27.1 per cent between 1990 and 2012 (figure 7.5), mainly due to the increase in methane emissions from enteric fermentation, which is the direct result of a significant increase in the number of cattle. A reduction in nitrous oxide emissions has been registered and is the result of the reduction in use of mineral fertilizers.

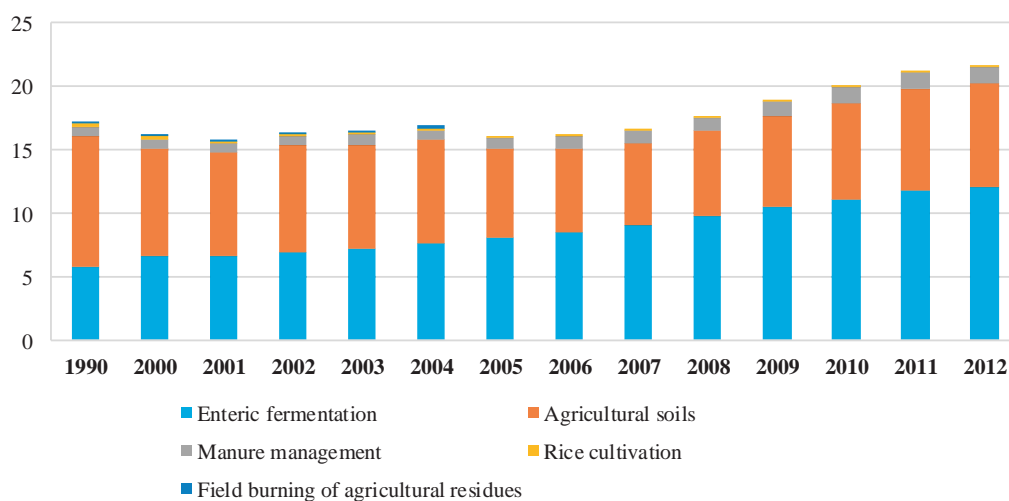
### *Land use change and forestry*

The LUCF sector is the greatest contributor to CO<sub>2</sub> removals. In 2012, the sector's contribution to emissions was -2.9 Mt CO<sub>2</sub>-eq. This translates in net sinks corresponding to 2.7 per cent of the total CO<sub>2</sub> emission, 1.4 per cent of total GHG emissions (figure

7.6). A marked increase in removals from 2008 onwards can be explained by intensive afforestation programmes in desert areas. While the overall contribution to emissions of the sector is net negative in most years, there is a shift in the category of land use change from removals to emissions. According to the TNC, this is mainly due to some reduction in pasture areas and significant reduction in the area under rice cultivation.

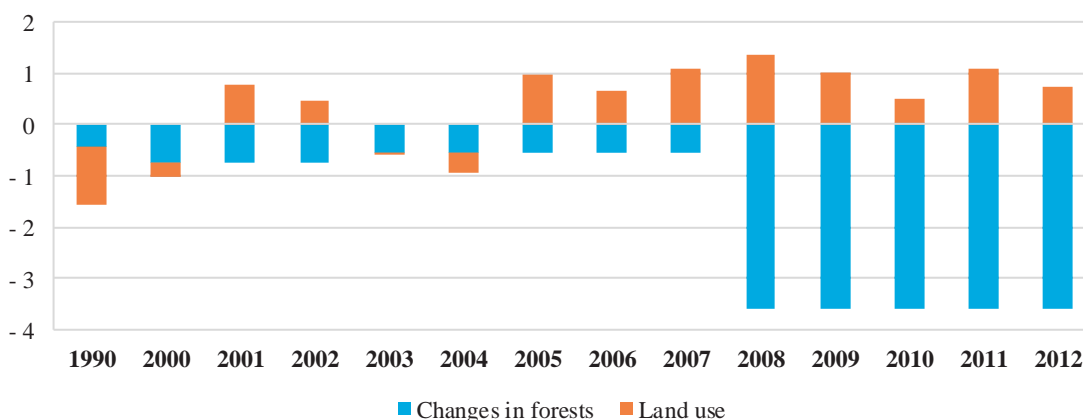
### *Waste*

The waste sector contributed 7.7 Mt CO<sub>2</sub>-eq. to GHG emissions in 2012. The GHG emissions of the sector come from CH<sub>4</sub> and N<sub>2</sub>O emissions from solid waste disposal on land, industrial wastewater and domestic and commercial wastewater. The inventory does not include emissions related to waste incineration, due to the lack of data.

**Figure 7.5: GHG emissions in the agriculture sector, 1990, 2000–2012, Mt CO<sub>2</sub>-eq.**

Source: Third National Communication to the UNFCCC, 2016.

Note: FAO estimates of the breakdown of GHG emissions from agricultural activities in the period 2010–2016 are shown in figure 13.7.

**Figure 7.6: Emissions/removals in the land use change and forestry sector, 1990, 2000–2012, Mt CO<sub>2</sub>-eq.**

Source: Third National Communication to the UNFCCC, 2016.

GHG emissions from the waste sector showed a steady increase in the period 1990–2012, by 87.8 per cent (figure 7.7). The greatest increase in emissions is in the category of solid waste disposal on land and can be explained by the increase in population in the country. In particular, CH<sub>4</sub> emissions increased by 93.1 per cent from 1990 to 2012.

### Transport

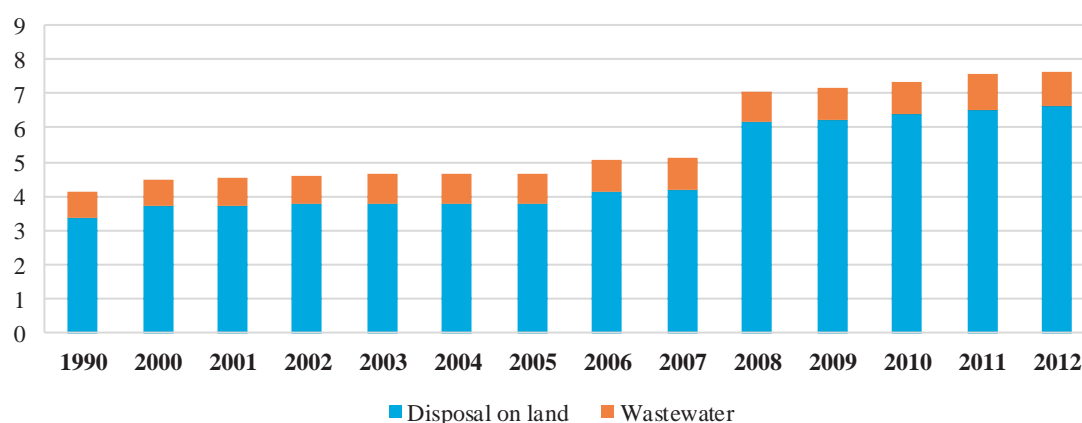
The contribution of the transport sector to overall emissions in the country is relatively limited, accounting for 6 per cent of all GHG emissions in 2012. The largest contributor to CO<sub>2</sub> emissions is road transport (63 per cent in 2012) (figure 14.1).

The transport sector is expected to grow dramatically in the coming decades as the Uzbekistan economy develops further. Chapter 14 and annex IV show the

opportunities for decoupling of transport CO<sub>2</sub> emissions from economic growth in Uzbekistan as demonstrated by the For Future Inland Transport Systems (ForFITS) tool.

### 7.3 Legal, policy and institutional framework

As at mid-2019, the country has neither comprehensive law nor a strategy regulating climate change mitigation and adaptation efforts. However, climate change issues are, to a certain extent, incorporated into sectoral legislation and major strategic documents. While climate change issues are cross-sectoral in nature, a more integrated legal and policy framework would enable the country to more effectively tackle climate change-related challenges. As at mid-2019, Uzbekistan is in the process of developing a national adaptation plan, with funding being requested from the Green Climate Fund.

**Figure 7.7: GHG emissions from the waste sector, 1990, 2000–2012, Mt CO<sub>2</sub>-eq.**

Source: Third National Communication to the UNFCCC, 2016.

### *Legal framework*

The 1996 Law on Ambient Air Protection is the main legislative basis for climate change mitigation in the country. Specifically, the Law sets air protection standards and contains provisions on measures aimed at reducing GHG emissions, including the use of energy efficiency measures, and self-reporting of GHG emissions by enterprises.

The 1997 Law on the Rational Use of Energy aims to achieve the efficient use of energy through, among other things, encouragement of the use of energy-efficient technologies, while also proposing provisions for economic measures that would encourage rational energy use. The recently adopted 2019 Law on the Use of Renewable Energy Sources aims to facilitate support measures for RES.

The 2009 Resolution of the Cabinet of Ministers No. 245 provides a regulatory framework for supply and consumption of electrical and thermal energy. It also foresees energy saving and efficiency standards for industrial consumers.

The 2013 Decree of the President No. 4512 encourages the development of alternative energy sources, by mandating the Cabinet of Ministers, the Academy of Sciences and other relevant institutions to take measures aimed at developing pilot projects in the field of solar and biogas energy.

### *Policy framework*

#### Action Strategy on Five Priority Directions for Development for the period 2017–2021

The Strategy identifies the key priorities for the economic development of the country. In recognizing the modernization and intensive development of

agriculture as one of the priorities, the Strategy also recognizes the importance of countering the negative impact of climate change on agriculture and people's livelihoods by emphasizing the centrality of water-saving techniques, as well as of research and development focused on new crop varieties and animal breeds. It also identifies the competitiveness of the country's economy as a key priority, and highlights the reduction of energy and resource intensity, wider utilization of energy-efficient and energy-saving technologies by industries, and wider use of RES, as actions towards the implementation of this key priority.

#### Strategy for Transition to Green Economy for the period 2019–2030

At present, the Strategy for Transition to Green Economy for the period 2019–2030 (2019 Resolution of the President No. 4477), adopted in October 2019, is considered the central policy document to implement Uzbekistan's commitments under the Paris Agreement and (I)NDC. The Strategy has a framework character. It defines priority areas for both mitigation and adaptation. Its implementation will be ensured through measures included in sectoral plans and strategies.

#### Strategy for Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030 in the Republic of Uzbekistan

This Strategy, together with its action plan (2019 Resolution of the Cabinet of Ministers No. 299) determine priority areas for disaster risk reduction: enhancement of the knowledge base on disaster risks; improved legal and institutional frameworks for disaster risk management; investments in disaster risk reduction measures; and increased preparedness for response to disasters. The Strategy places an emphasis

on implementation of disaster risk insurance. It also provides for development and implementation of local strategies for disaster risk reduction.

#### Programme of Actions on Environmental Protection for the period 2013–2017

The Programme identifies measures aimed at achieving a more rational use of natural resources. Adaptation to and mitigation of climate change are not specifically highlighted in the Programme.

#### Programmes on energy efficiency

Several strategic documents on energy efficiency have been adopted in the past decade, including the Programme of Measures to Reduce Energy Intensity and Introduce Energy Efficient Technologies in Economic Sectors and the Social Sector for the period 2015–2019, replaced by the similar programme for the period 2017–2021. Key measures include the replacement of inefficient boilers for space heating and hot water supply in detached houses and state-budget-funded organizations and the improvement of energy efficiency requirements for new buildings.

#### Comprehensive Programme of Measures related to Mitigation of the Consequences of the Aral Disaster, Rehabilitation and Socio-Economic Development of the Aral Sea Region for the period 2015–2018

The Programme identified priority areas for actions aimed at mitigating the impacts of the environmental catastrophe of the drying of the Aral Sea. Most relevant for this chapter, the Programme foresaw the need for implementation of large-scale afforestation of the dry seabed of the Aral Sea in order to prevent desertification in the region.

#### Strategic documents developed under international projects

Three other strategic documents relevant to climate change issues have been developed under international projects. Although they are directly referred to in Uzbekistan's 2017 (I)NDC, it does not appear that they have been formally adopted by the Government. These documents are:

- “Uzbekistan towards 2030: Transition to the resource efficient growth model”, developed under the framework of a joint UNDP and World Bank project, identifies concrete measures aimed at reducing the resource intensity of the country's economy by 2030. The identified measures focus mostly on increasing energy efficiency (identified

measures range from the phase-out of incandescent bulbs to the introduction of modern technologies to monitor natural gas losses during transportation), the expansion of solar energy and the intensification of agriculture (identified measures range from altering cropping patterns to significant expansion of water-efficient irrigation methods);

- “Towards Sustainable Energy: Strategy for Low Carbon Development”, developed under the framework of a joint UNDP and Ministry of Economy project, identifies the potential for energy saving and potential measures for improving energy efficiency in the energy sector, in particular regarding electricity, heat energy and energy consumption in buildings;
- “Strategy for improvement of energy efficiency of buildings in Uzbekistan: Directions of reforms and expected benefits” identifies the energy savings potential, as well as concrete measures to be implemented, in the sector in order to reach the identified potential savings by 2020 and 2030.

#### Sustainable Development Goals and targets relevant to this chapter

The current status of the country vis-à-vis targets 1.5, 11.b, 13.1, 13.2 and 13.3 of the 2030 Agenda for Sustainable Development is summarized in box 7.1.

#### *Institutional framework*

Uzbekistan does not have an institution or an intergovernmental committee with the responsibility of coordinating climate change measures in the country. Most mitigation and adaptation activities are implemented through sector-specific institutions with limited overall coordination. The lack of coordination has also been recognized in the TNC as a hindering factor for climate action in the country.

Uzhydromet, currently operating under the Cabinet of Ministers, is the designated National Focal Point to the UNFCCC, the National Designated Entity for Climate Technology Centre and Network (CTCN) and the National Designated Authority for the GCF. Uzhydromet is the main institution responsible for the preparation of national communications to the UNFCCC and for GHG inventories. Uzhydromet's mandate directly includes the implementation of relevant international obligations under the UNFCCC. In accordance with this mandate, this institution coordinates the work to prepare and submit information to the UNFCCC, represents the interests of Uzbekistan in UNFCCC and coordinates activities on climate financing. Uzhydromet lacks a clear, fully fledged mandate to define climate change policies at



the national level. Uzhydromet is not responsible for Uzbekistan's participation in the CDM.

The State Committee on Ecology and Environmental Protection (SCEEP) is the focal point for the GEF and the UNCCD. It is responsible for protection of the environment and the efficient use of natural resources,

including through the promotion of clean technologies and environmental awareness-raising.

The Ministry of Economy and Industry is the National Designated Authority for the CDM. As such, it is responsible for coordinating CDM-related activities in the country.

#### Box 7.1: Targets 1.5, 11.b, 13.1, 13.2 and 13.3 of the 2030 Agenda for Sustainable Development



##### **Goal 1. End poverty in all its forms everywhere**

**Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters**



##### **Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable**

**Target 11.b: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels**



##### **Goal 13. Take urgent action to combat climate change and its impacts**

**Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries**

**Target 13.2: Integrate climate change measures into national policies, strategies and planning**

Uzbekistan has not adopted as its national targets the global targets 11.b and 13.1. This is partially explained by the similarity of global indicators 1.5.1/11.5.1/13.1.1, 1.5.3/11.b.1/13.1.2 and 1.5.4/11.b.2/13.1.3.

Partial data on indicators 1.5.1/11.5.1/13.1.1 (Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population) are available from WHO Global Health Observatory (Monitoring Health for the SDGs, 2017). The average death rate in Uzbekistan due to natural disasters per 100,000 inhabitants during the period 2011–2015 was 0.1.

The country has participated in the Hyogo Framework for Action 2005–2015. In 2019, the country adopted the Strategy for Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030 in the Republic of Uzbekistan, together with an action plan (global/national indicator 1.5.3).

Concerning global indicators 1.5.4/11.b.2/13.1.3 (Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies), nationalized by Uzbekistan as indicator 1.5.4, there is no evidence of local governments having developed and adopted climate change strategies with the aim to reduce local disaster risk and strengthen resilience to climate-related hazards and natural disasters.

Adoption of the Strategy for Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030 in the Republic of Uzbekistan should ensure coherence among the different activities and facilitate learning from good examples to progress towards a holistic disaster risk management regime at all levels in the country (target 11.b).

Currently, Uzbekistan does not have a comprehensive national strategy on climate change adaptation and mitigation. Climate change concerns are, at least nominally, included in most national policies and plans, with a focus on energy efficiency for mitigation and water-saving measures for adaptation. The lack of a comprehensive national strategy on climate change adaptation and mitigation is a barrier to the country achieving progress on targets 13.1 and 13.2.

##### **Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning**

Some efforts are made to integrate climate change issues into secondary school curricula (chapter 5). Climate change is not integrated into curricula of primary education, vocational training and higher education, although some positive ad hoc examples are reported. Uzhydromet and local governments, as well as international organizations and NGOs present in the country, have been active in initiatives and campaigns to raise awareness and advance citizens' education and awareness on climate change-related issues, most of these activities being financed through projects.

With respect to indicator 13.3.2 (Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions), the institutional, systemic and individual capacities to tackle climate change are still relatively limited in the country.

In early 2019, the country established the International Innovation Centre for the Aral Sea Region which, among other activities, is active in experimental research on tree species that can adapt to the conditions of the dried Aral Sea bed (chapter 1).

#### *Economic measures*

The country has no emissions trading schemes. No carbon tax is in place.

Uzbekistan has had significant success in hosting CDM projects. The country has been hosting 15

registered CDM projects (table 7.2). The active engagement of the country under the CDM has resulted in significant GHG emissions reductions.

#### *Information instruments*

A number of activities aimed at increasing the awareness of the general population and of specific target groups have been undertaken. Most of these activities are ad hoc and are conceptualized and implemented under the framework of donor-financed projects.

**Table 7.2: Registered Clean Development Mechanism projects**

Registration date	Title	Annex I Parties	Focus GHG	Reductions
14 March 2009	Reduction of N <sub>2</sub> O emissions at shop#25, production line #3 at "Navoiazot" plant	Japan	N <sub>2</sub> O	118 900
16 March 2009	Reduction of N <sub>2</sub> O emissions at shop#25, production line #2 at "Navoiazot" plant	Japan	N <sub>2</sub> O	132 500
27 March 2009	Reduction of N <sub>2</sub> O emissions at shop#25, production line #4 at "Navoiazot" plant	Japan	N <sub>2</sub> O	112 500
29 March 2009	Reduction of N <sub>2</sub> O emissions at shop#25, production line #1 at "Navoiazot" plant	Japan	N <sub>2</sub> O	132 500
03 April 2009	Reduction of N <sub>2</sub> O emissions at "Maxam-Chirchik" plant	Japan	N <sub>2</sub> O	353 153
10 April 2009	Reduction of N <sub>2</sub> O emissions at "Ferganaazot" plant	Japan	N <sub>2</sub> O	170 925
19 December 2009	Akhangaran Landfill Gas Capture Project in Tashkent	Japan, United Kingdom of Great Britain and Northern Ireland	CH <sub>4</sub>	84 908
26 November 2010	Reduced gas leakage at compressor stations		CH <sub>4</sub>	504 000
27 November 2010	Leak Reduction in Above Ground Gas Distribution Equipment in the Gas Distribution Network UzTransgaz–Markazgaz (UzTG)	United Kingdom of Great Britain and Northern Ireland	CH <sub>4</sub>	1 021 137
28 December 2010	Leak Reduction in Above Ground Distribution Equipment in the Gas Distribution Network UzTransgaz–Zhanubgaz (ZhGT)	United Kingdom of Great Britain and Northern Ireland	CH <sub>4</sub>	559 912
17 February 2011	Reducing gas leaks in low pressure and medium pressure gas distribution networks in Fergana Valley	United Arab Emirates, the Netherlands	CH <sub>4</sub>	1 211 629
22 August 2011	Leak Reduction in Above Ground Distribution Equipment in the Gas Distribution Network UzTransgaz–Garbgaz (GGT)	Switzerland, United Kingdom of Great Britain and Northern Ireland	CH <sub>4</sub>	818 166
09 September 2011	Reduction of gas leakages in low- and middle- pressure gas distribution pipelines in Tashkent City and Tashkent Region	United Kingdom of Great Britain and Northern Ireland	CH <sub>4</sub>	1 053 164
07 March 2012	Leak reduction in above ground gas distribution system in the gas distribution networks in Khorezm region and the Republic of Karakalpakstan	United Arab Emirates	CH <sub>4</sub>	232 184
15 January 2014	"Yoshlik" Landfill Gas Capture Project, Uzbekistan	The Netherlands	CH <sub>4</sub>	30 593

Source: UNFCCC CDM Project Search at <https://cdm.unfccc.int/Projects/projsearch.html>

Note: Reductions indicated are estimated emission reductions in metric tons of CO<sub>2</sub>-eq. per year, as stated by the project participants.

Under the framework of the project “Climate Risk Management in Uzbekistan”, implemented by UNDP in collaboration with Uzhydromet between 2011 and 2015, more than 3,000 people, including farmers, have been trained in good practices for water conservation and drought mitigation. The project also enabled the preparation of a number of climate change-related publications, such as “Climate Risk Profile”, “Guidelines for Assessing Climate Risks in Uzbekistan”, “Approaches to Assessing Water Availability and Water Consumption in Uzbekistan in a Changing Climate”, among others. A training course on “Climate Change and Climate Risk Management” has been developed for students of higher educational institutions.

Under the framework of the national component of the global project “Climate change adaptation to protect human health”, jointly implemented by UNDP and WHO between 2010 and 2014, a number of brochures and booklets have been developed on the topic of climate change and health. Additionally, a training programme for general practitioners entitled “Health Impacts of Climate Change” has been developed.

The process of preparation of the TNC has also been an opportunity for awareness-raising on climate change issues in the country, with Uzhydromet publishing articles focusing on the results of preparatory studies and holding several press conferences.

In terms of the preparation of GHG inventories, Uzhydromet is quite effective in ensuring the participation of all relevant stakeholders in the process. However, the preparation of the GHG inventories is almost exclusively financed through project activities supported by donor funds. Preparation of GHG inventories is not a regular activity. The most recent GHG inventory available in 2019 includes data only up to 2012. Outdated data makes it difficult to develop evidence-based policies that can be really effective in ensuring climate action. As a non-annex I party to the UNFCCC, Uzbekistan will have to submit a GHG inventory every two years as part of its Biennial Update Reports (BURs) in line with the recently introduced requirements under UNFCCC.

## 7.4 Adaptation and mitigation

### *Commitments and scenarios*

#### (Intended) Nationally Determined Contribution

The (I)NDC of Uzbekistan, submitted in 2017, which

became the country’s first Nationally Determined Contribution following the ratification of the Paris Agreement in November 2018, 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. The country plans to reduce the carbon intensity of the economy through the improvement of energy efficiency, decreasing the resource intensity of the economy and increasing the share of renewable energy sources in the country’s overall energy balance. Considering the strong growth of the economy of Uzbekistan, with GDP growth of 191 per cent between 1990 and 2010, and the projected growth of the population to 37 million people in 2030, it is very probable that overall emissions will increase significantly, even if the mitigation target postulated in the (I)NDC is reached.

The (I)NDC also postulates an adaptation objective, mainly focusing on adaptation in agriculture, water management, forestry, the social sector and the Aral Sea region.

#### Second National Communication to the UNFCCC

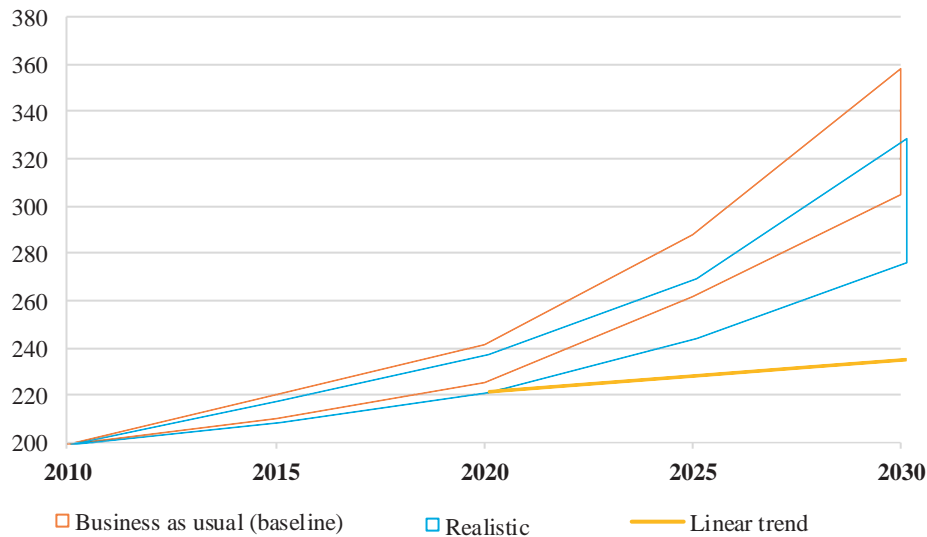
The Second National Communication, submitted in 2008, contained emission predictions up until 2010, 2015 and 2020. The emission predictions for 2010, ranging between 263.1 Mt and 289.4 Mt of CO<sub>2</sub>-eq, significantly overestimated the actual emissions for 2010, which amounted to 199.2 Mt of CO<sub>2</sub>-eq.

#### Third National Communication to the UNFCCC

The TNC, submitted in 2016, includes three different emission scenarios until 2030. Methodologically, the TNC uses two approaches for estimating emissions, namely, the Greenhouse Gas Abatement Cost Model (GACMO), under which two scenarios (“business as usual” and “realistic”) were developed, and a linear trend (figure 7.8). Under all three scenarios, Uzbekistan is expecting to see its overall emissions increase, with an increase ranging from a more modest 18 per cent to 80 per cent compared with the baseline year 2010 (199.2 Mt of CO<sub>2</sub>-eq).

The two scenarios developed using the GACMO model have been prepared assuming an increase in population to between 36 million and 37 million inhabitants in 2030, and three distinct GDP growth rates (8 per cent per year, variable annual increase between 2.7 per cent and 6 per cent, and 4.8 per cent).

**Figure 7.8: Emissions in the business as usual, realistic and linear trend scenarios, 2010–2030, Mt CO<sub>2</sub>-eq.**



Source: Third National Communication to the UNFCCC, 2016.

Under the GACMO “business as usual” scenario, which assumes no additional measures and an increase in energy consumption proportional to GDP and population growth, emissions are expected to increase steadily, reaching annual GHG emissions between 305 Mt and 358 Mt of CO<sub>2</sub>-eq. in 2030, an increase of between 53 per cent and 80 per cent compared with the baseline year 2010. Under the GACMO “realistic” scenario, which assumes additional measures aimed at reducing the carbon intensity of the country’s economy, it is expected that emissions will grow less rapidly, reaching annual GHG emissions between 277 Mt and 330 Mt of CO<sub>2</sub>-eq. in 2030, an increase of between 39 per cent and 66 per cent compared with the baseline year 2010.

The “linear trend” scenario has been developed following a linear trend based on the increase of emissions registered between 1990 and 2012, with no additional considerations based on population increase or GDP growth. Under the “linear trend” scenario, it is expected that annual emissions in 2030 would amount to 235 Mt of CO<sub>2</sub>-eq., increasing by 18 per cent compared with the baseline year 2010.

More recent, albeit unofficial, data on Uzbekistan’s GHG emissions has been prepared using the World Resources Institute (WRI) Climate Analysis Indicators Tool (CAIT). Data from the WRI CAIT confirm the increasing trend in Uzbekistan’s emissions, which is also recognized in the country’s (I)NDC, and estimates the emissions in 2014 at 214.70 Mt CO<sub>2</sub>-eq. According to WRI CAIT data, in 2014, the per capita emissions were 6.98 t CO<sub>2</sub>-eq., slightly above both the world average (estimated at

6.73 t CO<sub>2</sub>-eq. per capita by WRI CAIT for 2014) and Uzbekistan’s per capita emissions in 2012 (equal to 6.9 t CO<sub>2</sub>-eq. per capita according to the TNC). The carbon intensity of the national economy remains high, and more ambitious emission reductions could be achieved through measures to decrease carbon intensity.

#### *Adaptation and mitigation measures*

##### Energy

Since the energy sector is the greatest contributor to GHG emissions in the country, it is the focus of most mitigation measures. Mitigation measures implemented in the sector mostly concern increasing energy efficiency, including energy efficiency in buildings, and increasing the share of renewable energy in the energy balance.

The country intends to increase the share of RES in its energy balance to 25 per cent by 2030, including that of solar energy to 8.8 per cent and that of wind energy to 5 per cent (2019 Resolution of the President No. 4422).

##### Industry

There is no evidence of sector-wide specific adaptation measures being implemented in industry. With regard to mitigation, measures are being implemented with a focus on fuel and energy saving. They are implemented in the framework of state programmes on energy efficiency.



### Agriculture

Most measures in agriculture focus on adapting to new climatic conditions, especially increasing water scarcity. They focus on water-saving measures in irrigation, including but not limited to expansion of drip irrigation networks. Another important adaptation measure for the sector is the shift from cotton to less water-intensive crops. Although cotton continues to be the most prevalent crop as at early 2019, these measures have led to strong growth in horticulture in the country (chapter 13).

### Forestry

The most important measures relevant to climate change currently implemented in the sector are the massive afforestation campaigns that the country is currently undertaking in the dried bed of the Aral Sea. Around 500,000 ha of the dried bed have already been afforested with vegetation resistant to desertic conditions, such as the saxaul tree. These afforestation campaigns seem to be already reflected in the increased removals of the LUCF sector, with a significant increase in sinks provided by forests from 2008 onwards.

Additionally, and particularly should the afforestation efforts be successful in diversifying the planted species, these forest plantations could provide much-needed economic opportunities to the impoverished communities that once relied on fishing. The afforestation efforts are also expected to be essential in mitigating dust storms and consequent negative effects on human health.

### Transport

According to SCEEP, during the period 2007–2012, 188,000 vehicles have been modified to run on gas fuel. Other mitigation measures in the transport sector concern the gradual electrification of railroad transport.

Despite the potential vulnerability of transport infrastructure to climate change, there is no evidence of sector-wide adaptation measures being implemented.

### Tourism

There is little awareness of the necessity for the sector to adapt to climate change. While there are sporadic mitigation measures (focusing mostly on energy efficiency), there is no evidence of sector-wide specific adaptation or mitigation measures being implemented.

## **7.5 Assessment, conclusions and recommendations**

### *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 thoroughly 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<sub>6</sub> 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<sub>6</sub>) 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.*