

# Uzbekistan

## Environmental Performance Reviews



### Third Review – Highlights



## Sustainable Development Goals

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

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

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

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

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

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

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

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

**Another crucial aspect for the achievement of the 2030 Agenda is to leave no one behind.** Examples in this respect are the unequal distribution of health-care services throughout the country and the lack of qualified health professionals in remote rural areas, which present important challenges for achieving progress with targets 3.1 and



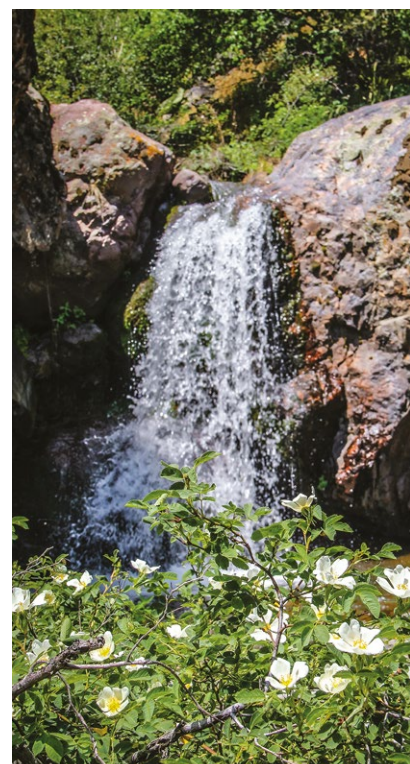
3.2, on mothers' and children's health. Under current health-care financing, differences in income among population groups result in further health inequalities, calling for urgent actions under target 3.8.

### BOX 1: TARGET 7.1 OF THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

Target 7.1 (By 2030, ensure universal access to affordable, reliable and modern energy services) is measured by indicator 7.1.1 (Proportion of population with access to electricity), nationalized by Uzbekistan without changes. The State Committee on Statistics reports to have already achieved 100 per cent electrification of both urban and rural areas in 2012. Nevertheless, it is difficult to assess reliability and affordability due to the lack of reliable data, especially on rural electrification. Reportedly, rural areas experience regular and long electricity shortages and interruptions. In the cities, even in Tashkent, the power can be off for several hours a day during winter.

The unreliable power supply has a clear gender dimension in Uzbekistan, since women typically perform most household and family obligations and are key consumers of electricity. According to a 2018 report by the Asian Development Bank, the unsustainable supply of energy means that women cannot take advantage of labour-saving appliances such as washing machines and electric cooking stoves, which affects women's efficiency and creates barriers for working women.

The nationalized indicator 7.1.2 (Proportion of population using clean fuels (gas and electricity) technologies for cooking) slightly differs from global indicator 7.1.2 (Proportion of population with primary reliance on clean fuels and technology). No up-to-date data are available on indicator 7.1.2.



## Recommended measures:

- **Ensure the effective participation of civil society and local authorities in the institutional framework for national Sustainable Development Goals implementation and monitoring;**
- **Ensure the regular preparation of reports on national Sustainable Development Goals implementation;**
- **Review the national targets with a view to encompassing additional targets in line with the 2030 Agenda;**
- **Align some of the national indicators with the global indicator framework;**
- **Adopt the global indicator 3.9.1 and make information on the mortality rate attributed to household and ambient air pollution available;**
- **Increase the number of environment-related Sustainable Development Goals indicators made publicly available online;**
- **Initiate the collection of gender and environment statistics.**

Note: The sections entitled "Recommended measures" represent an abridged version of selected recommendations from the Environmental Performance Review report and are provided for information purposes only. Please consult the text of the report for the full text of recommendations as adopted by the United Nations Economic Commission for Europe (ECE) Committee on Environmental Policy.



## Legal, policy and institutional framework

**In 2019, Uzbekistan is in the midst of intensive reforms of its policy and legal framework, including in the environmental area.** Achievements include the adoption in 2019 of several long-term policy documents, such as the Concept on Environmental Protection until 2030, Strategy for Transition to Green Economy for the period 2019–2030, Strategy on Municipal Waste Management for the period 2019–2028 and Strategy for the Conservation of Biological Diversity for the period 2019–2028. Several new draft laws are in the process of preparation and the country is about to embark on drafting an environmental code.

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

**Uzbekistan does not yet apply the strategic environmental assessment (SEA) tool to evaluate environmental impacts of future sectoral strategic documents.**

Awareness of the SEA tool is limited in the country. Introduction of the SEA tool could help Uzbekistan to enhance policy coherence for sustainable development in line with target 17.14 of the 2030 Agenda.

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

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



## **BOX 2: POLICIES TO TACKLE THE CONSEQUENCES OF THE ARAL SEA DISASTER**

The policy framework for tackling the consequences of the Aral Sea disaster focuses on the two most affected regions – the Republic of Karakalpakstan and Khorosm Oblast – and includes actions in several key directions:

- Improving the management and rational use of water resources (e.g. by creating local water bodies and modernizing water management infrastructure);
- Improving health conditions (e.g. by ensuring stable drinking water supply, preventing respiratory diseases and enriching food products with iron, folic acid and iodine);
- Expanding opportunities for employment and income generation;
- Restoring ecosystems and biodiversity (e.g. by designating new protected areas, preserving natural water bodies in the Amu Darya delta and planting forest on the dried bed of the Aral Sea);
- Improving infrastructure to ensure socioeconomic development (e.g. by refurbishing existing enterprises and introducing new production facilities).

## **BOX 3: ROLE OF SELF-GOVERNMENT**

Unlike in many other countries, self-government (also known as makhalla) is an important dimension of Uzbekistan's governance. Self-government bodies are not formally part of the public administration system but are closely connected to it. Self-government bodies play an important role in supporting vulnerable groups of the population. 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.

## **Recommended measures:**

- **Ensure comprehensive coverage of environmental issues in the national policy framework;**
- **Support sub-national authorities in the development and adoption of strategic documents on environmental protection;**
- **Develop the legal framework to introduce a fully-fledged SEA system, raise awareness and provide capacity-building on SEA;**
- **Ensure meaningful stakeholder participation in interagency coordination bodies.**



## Regulatory and compliance assurance mechanisms

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

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

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

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

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

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

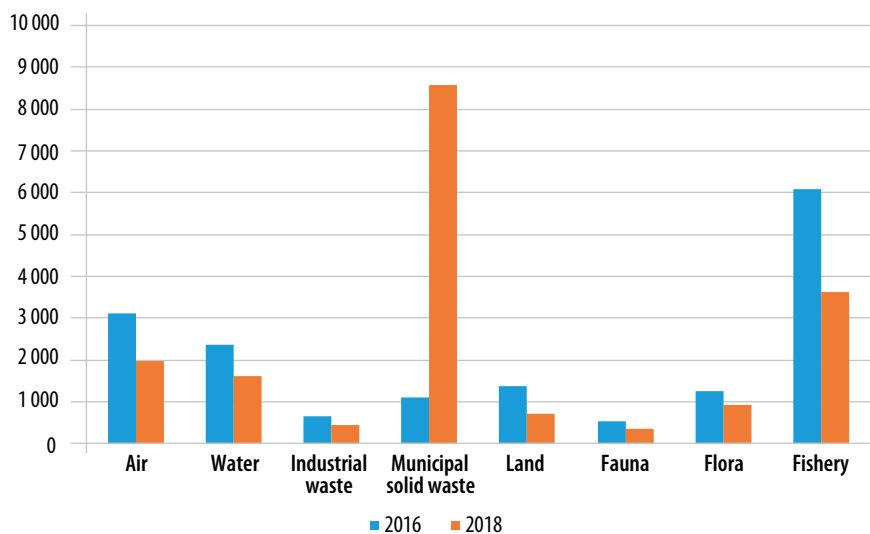
**Numerous companies have declared their commitment to corporate social responsibility (CSR).** However, the low level of public environmental awareness does not incentivize companies to integrate environmental aspects into their CSR policies.

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



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

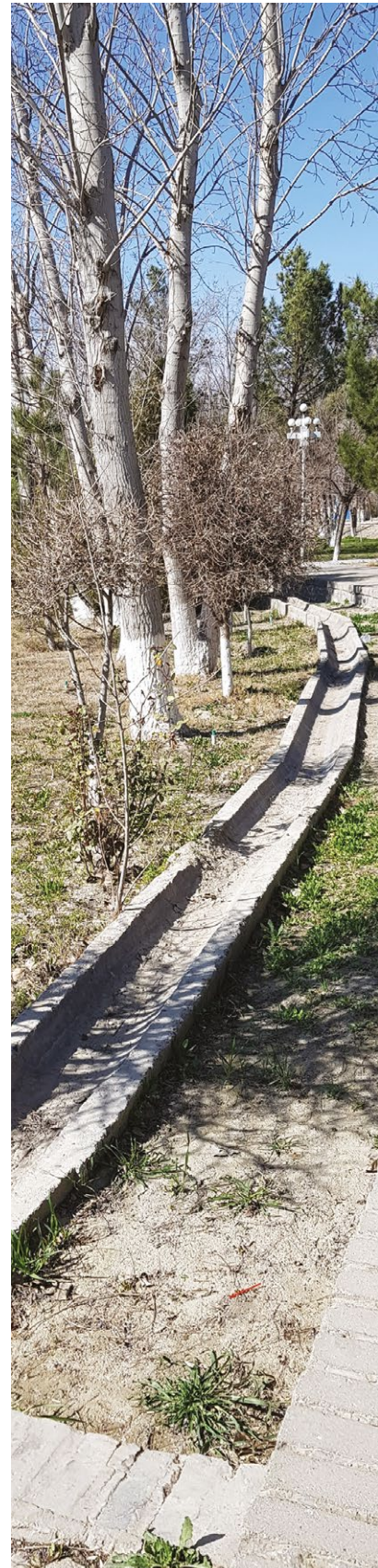
**Figure 1: Environmental inspections, 2016, 2018, number**



Source: SCEEP, 2019.

## Recommended measures:

- **Revise the legal and regulatory framework on SEE in line with the standards laid down by the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) and the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention);**
- **Develop effective mechanisms for citizen environmental enforcement;**
- **Regularly disclose data about the performance of the environmental compliance assurance system;**
- **Ensure availability of data on activities of public environmental inspectors;**
- **Provide incentives for the application of environmental audit;**
- **Promote eco-labelling, including the application of internationally recognized eco-labelling schemes;**
- **Review the proportionality of administrative fines for environmental offences;**
- **Develop the legal framework enabling the application of environmental insurance.**





## Greening the economy

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

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

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

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

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

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

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

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

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

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



**Uzbekistan started developing the institutional and legal framework for the establishment of public–private partnerships (PPPs), in line with target 17.17 of the 2030 Agenda.** The intention is to use PPPs in areas such as the provision of public utility services and financing of public infrastructure. The major deterrent is the lack of experience in the use of PPPs.

**Table 1: General government expenditures on environmental protection, 2012–2019**

	2012	2013	2014	2015	2016	2017	2018	2019
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

Source: IMF, Government Finance Statistics; IMF, World Economic Outlook database, April 2019; SCEEP, direct communication.

Notes: General government expenditures by function (COFOG). Data for 2018 are preliminary; data for 2019 are planned expenditures.

#### **BOX 4: STRATEGY FOR TRANSITION TO GREEN ECONOMY FOR THE PERIOD 2019–2030**

Uzbekistan's commitment to green economy is clearly stated in the 2019 Strategy for Transition to Green Economy for the period 2019–2030. 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. Its members are predominantly ministers and chairpersons of state committees. It is planned to prepare annual action plans for implementation. The Strategy does not include any assessment of costs of its implementation. No mechanism for reporting on implementation is envisaged by the Strategy.

## **Recommended measures:**

- **Reform the system of pollution charges by focusing on major air and water pollutants;**
- **Review the costs and benefits of introducing water abstraction charges for irrigation water;**
- **Continue with liberalization of prices of motor fuels;**
- **Continue gradually bringing utility tariffs to cost-recovery levels;**
- **Proceed with the planned phasing out of fossil fuel subsidies;**
- **Introduce RES support schemes;**
- **Publish detailed reports on revenues and expenditures of the environmental fund;**
- **Develop subsidiary legislation on public procurement;**
- **Establish an effective PPP framework in line with advanced international standards.**



## Environmental monitoring, information and science

**Environmental monitoring activities are conducted according to the five-year programmes of environmental monitoring.** Key areas for development are automation and digitalization of monitoring and the introduction of PM<sub>10</sub> and PM<sub>2.5</sub> monitoring. An integrated environmental information system is not available.

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

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

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

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

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

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



**Table 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	2
Transport stations	Tashkent	2
	Almalyk, Angren, Andijan, Bekabad, Bukhara, Gulistan, Denau, Karshi, Kokand, Navoiy, Namangan, Nukus, Samarkand, Fergana, Chirchiq, Sharisabz	1

Source: Uzhydromet, 2019.

#### **BOX 5: DRINKING WATER MONITORING IN TASHKENT CITY**

In Tashkent City, State Unitary Enterprise “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, Kadyrynsky, 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 workplan.

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

## **Recommended measures:**

- Automate data collection, quality control and transfer towards the establishment of a continuous monitoring and real-time pollution data collection system;
- Establish an integrated environmental information system;
- Ensure accreditation of all analytical laboratories;
- Provide online public access to all reports and bulletins produced by government agencies involved in environmental monitoring;
- Make the collected environmental statistics available online;
- Reinitiate the regular production of the national report on the state of the environment and use of natural resources.



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

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

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

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

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

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

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

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



### **BOX 6: CHALLENGES TO ACCESS TO INFORMATION**

Most members of the public are of the view that information on environmental matters is generally disseminated in a satisfactory manner, 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. 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, environmental NGOs interact with governmental authorities on environmental protection rather actively and receive environmental information, generally, the public lacks interest in accessing information on environmental matters. A large 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. 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.

## **Recommended measures:**

- **Make available online all information on environmental matters in the possession of governmental authorities;**
- **Enhance the legal framework to enable effective public access to information on environmental matters;**
- **Develop detailed procedures to enable effective public participation in decision-making on environmental matters;**
- **Simplify the procedures for the operation of environmental NGOs;**
- **Develop the capacity of civil servants regarding access to information and public participation on environmental matters;**
- **Give a mandate on ESD to SCEEP and the three ministries in the education sector;**
- **Revitalize the work of the Coordination Council on Education for Sustainable Development;**
- **Support the work on ESD by academia and NGOs.**



## Implementation of international agreements and commitments

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

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

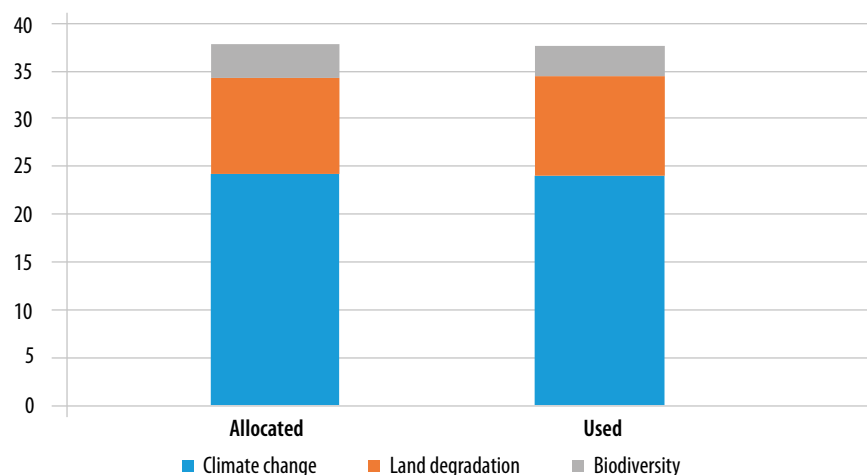
**Uzbekistan has a proven high capacity for implementation and financial management of Global Environmental Facility (GEF) projects.** About US\$37.524 million of GEF funding was utilized in the period 2010–2018.

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

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

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

**Figure 2: GEF resources for Uzbekistan by focus area for the period 2010–2018, US\$ million**



Source: [www.thegef.org/country/uzbekistan](http://www.thegef.org/country/uzbekistan).

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

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

#### **BOX 7: GLOBAL AND REGIONAL MEAs**

Uzbekistan should consider accession to the following agreements:

- 1979 Convention on Long Range Transboundary Air Pollution and its protocols;
- 1991 Convention on Environmental Impact Assessment in a Transboundary Context and its 2003 Protocol on Strategic Environmental Assessment;
- 1992 Convention on the Transboundary Effects of Industrial Accidents;
- 1998 Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters and its 2003 Protocol on Pollutant Release and Transfer Registers;
- 1999 Protocol on Water and Health to the 1992 Convention on the Use and Protection of Transboundary Watercourses and International Lakes;
- 1998 Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade;
- 2013 Minamata Convention on Mercury;
- 1986 Convention on Early Notification of a Nuclear Accident;
- 1994 Convention on Nuclear Safety;
- 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency;
- Several United Nations transport-related agreements.

### **Recommended measures:**

- **Join the MEAs to which Uzbekistan is not a party;**
- **Establish effective mechanisms for coordination on environment-related issues that are subject of international, regional or bilateral cooperation;**
- **Improve the system of MEA focal points;**
- **Strengthen technical capacities to implement and report on MEAs;**
- **Continue to support the Multi-Partner Human Security Trust Fund for the Aral Sea Region and ensure its transparency.**



## Climate change

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

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

**The land use change and forestry (LUCF) sector is the greatest contributor to CO<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> emissions, and 1.4 per cent of total GHG emissions. A marked increase in removals from 2008 onwards is due to intensive afforestation in desert areas.

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

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

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

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

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

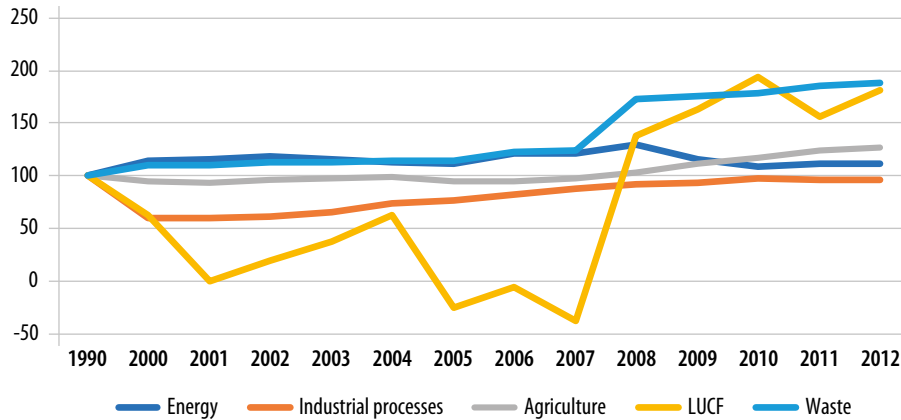
**The 2019 Strategy for Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030 in the Republic of Uzbekistan defined priority areas for disaster risk reduction.** Local disaster risk reduction strategies are lacking.

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



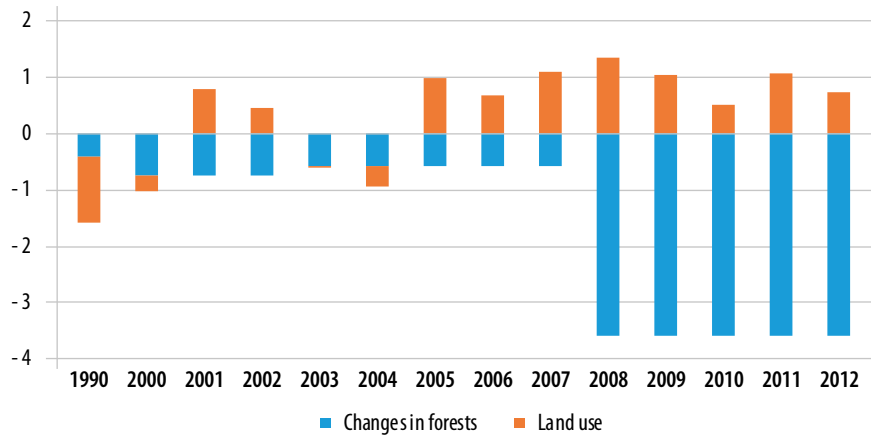


**Figure 3: Total GHG emissions by sector, 1990, 2000–2012, 1990=100**



Source: Third National Communication to the UNFCCC, 2016.

**Figure 4: Emissions/removals in the LUCF sector, 1990, 2000–2012, Mt CO<sub>2</sub>-eq.**



Source: Third National Communication to the UNFCCC, 2016.

## Recommended measures:

- **Adopt a law on climate action;**
- **Adopt a long-term strategy on climate change adaptation and mitigation;**
- **Establish climate change units in sectoral authorities;**
- **Establish a mechanism for coordination of climate change-related measures at the national level;**
- **Ensure a continuous process of preparation of the GHG inventory;**
- **Ensure the development of local disaster risk reduction strategies in line with the Sendai Framework;**
- **Integrate climate change-related topics into the curricula in primary, secondary and higher education and vocational training.**





## Air protection

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

**Compared with World Health Organization (WHO) and European Union (EU) air quality standards, the air quality standards in Uzbekistan are the same for NO<sub>2</sub> and ozone, more stringent for CO and less stringent for SO<sub>2</sub>.** For PM<sub>10</sub> and PM<sub>2.5</sub>, no air quality standards are defined in Uzbekistan.

**Although PM<sub>10</sub> and PM<sub>2.5</sub> data are scarce in Uzbekistan, the probability that WHO Air Quality Guidelines for the mean concentrations of PM<sub>10</sub> are exceeded in cities is high.** In a few cities, the annual dust concentration exceeded the national standard for dust.

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

**The industrial emissions of SO<sub>2</sub>, NO<sub>x</sub> and total suspended particles (TSP) account for 40 per cent, 5 per cent and 38 per cent of the total national emissions respectively.** In industrial cities such as Angren, Almalyk, Fergana and Navoiy, emissions from industry and mining lead to relatively high values on the Air Pollution Index used in Uzbekistan.

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

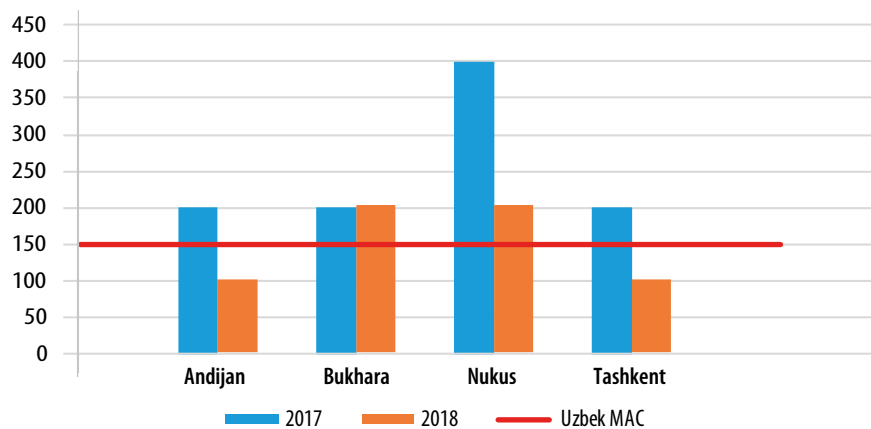
**In 2016, 19 per cent of the emissions of SO<sub>2</sub> and 70 per cent of the emissions of NO<sub>x</sub> from stationary sources were caused by thermal power plants (TPPs).** The emission limits defined for specific plants in Uzbekistan are generally less stringent in comparison with EU emission standards based on BATs. On a positive note, the modernization of old TPPs has started.

**The agricultural sector is the largest source (99 per cent) of emissions of NH<sub>3</sub>.** Measures to control ammonia emissions are not yet widely applied.

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

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

**Figure 5: Annual mean dust concentration in selected cities, 2017–2018,  $\mu\text{g}/\text{m}^3$**



Source: Uzhydromet, 2019.

**Table 3: HCFC consumption, 2009, 2013, 2016–2018, ODP tons**

	Baseline (1989)	2009	2013	2016	2017	2018
ODP	74.70	1.80	4.60	4.68	0.87	2.53

Sources: United Nations Statistics Division, UNEP, 30th Meeting of Parties to the Montreal Protocol, annex IVb (2018).

## Recommended measures:

- **Monitor  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$  at all measuring posts in cities and near industrial complexes;**
- **Introduce legally-binding limit values for  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$ ;**
- **Promote the application of BAT to abate air pollution from industrial sources;**
- **Stimulate measures to improve energy efficiency in residential buildings;**
- **Promote the use of low-carbon technology and cleaner fuels instead of liquid and solid fuels for individual households;**
- **Promote the use of individual heat-use monitoring devices in apartment buildings.**



## Water management

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

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

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

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

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

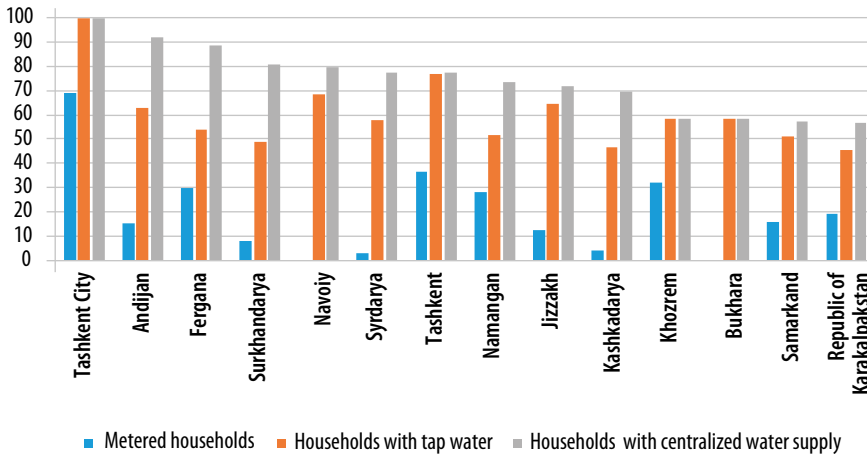
**In terms of water-use efficiency, Uzbekistan reports US\$1.2 per m<sup>3</sup> of water for 2015.** This figure is the lowest of all countries that reported against the global Sustainable Development Goals indicator 6.4.1 for 2015.

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

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



**Figure 6: Households with access to centralized (piped) water supply systems, tap water within property and meters, by region as at 1 January 2018, per cent**



Source: ECE Secretariat calculations based on State Committee on Statistics Report, 2018.

## Recommended measures:

- Identify priority communities and settlements to target for expansion of water supply and sanitation infrastructure;
- Identify priority investments to refurbish existing irrigation infrastructure and improve collector-drainage systems;
- Support water efficiency, including metering schemes and financial incentives for purchasing water-efficient technologies;
- Embed water-efficient principles in land use planning;
- Ensure that agricultural policies and strategies are coordinated with water management objectives;
- Improve the cross-sectoral collection, sharing and use of data;
- Consider the establishment of a national policy dialogue on IWRM.



## Waste and chemicals management

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

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

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

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

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

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

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

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

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



**Table 4: MSW dumpsites, 2017, number**

	Official	Unofficial	Other*
Republic of Karakalpakstan	17	12	804
Andijan	15	29	1 865
Bukhara	15	26	1 137
Jizzakh	10	250	..
Kashkadarya	16	141	1 384
Navoiy	9	10	695
Namangan	12	96	1 786
Samarkand	15	86	2 502
Surkhandarya	18	12	1 613
Syrdarya	12	83	498
Tashkent	23	96	2 358
Fergana	15	15	2 091
Khorezm	9	75	1 217
<b>Total</b>	<b>186</b>	<b>931</b>	<b>17 950</b>

Source: SCEEP, 2018.

Note: \* not confirmed.

**Table 5: Recycling companies and amount of processed waste**

	Companies (number)	Processed waste (tons)
Total	183	631 360
Polyethylene	72	34 391
Paper	65	90 990
Tyres and rubber	16	35 549
Textiles	1	7 000
Glass	7	11 137
Oils	1	35 000
Metals	10	215 897
Other	11	201 396

Source: SCEEP, 2018.

## Recommended measures:

- **Develop a new law on waste;**
- **Elaborate a priority list for the modernization of landfills;**
- **Introduce a waste classification system based on chemical-physical characteristics;**
- **Move from calculated waste data to data from weighbridges;**
- **Strengthen international cooperation in POPs management;**
- **Consider establishing a state-owned enterprise specialized in medical waste management;**
- **Prepare a new chemical profile, using the latest data;**
- **Provide training on safe management of chemicals.**



## Biodiversity and protected areas

**The adoption of the 2019 National Biodiversity Strategy and Action Plan (NBSAP) is a step forward for protection of biodiversity and implementation of the country's international commitments on biodiversity.** However, only a few rare and threatened fauna species, and no flora species, are currently covered by single species conservation plans. No national wetland policy is in place. The development and implementation of policies on biodiversity conservation is seriously hampered by the unavailability of reliable data.

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

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

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

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

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

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

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

**The environmental disaster in the Aral Sea region, formerly abundant in flora and fauna species, resulted in a sharp decrease in biological diversity.** The Government's efforts focus on protection of biodiversity that survived the disaster and





rehabilitation of aquatic and wetland ecosystems in the Amu Darya River delta through engineering works aimed at landscaping the delta for the restoration of aquatic and wetland ecosystems and stabilizing the water regime. The Government's efforts also aim at stabilization of the soils of the dried bed of the Aral Sea.

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

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

#### **BOX 8: BIODIVERSITY-RELATED MEASURES IN THE ARAL SEA AREA**

Uzbekistan works to expand the PA network in the Aral Sea area. In 2011, it designated the Lower Amu Darya State Biosphere Reserve (located further upstream from the former coast of the Aral Sea) and, in 2016, the large-scale Saygachiy Complex (Landscape) Reserve. Designation of five new PAs in the Republic of Karakalpakstan is planned for the next three years.

As the scarcity of water resources is still the major challenge for the survival and recovery of flora and fauna species populations, engineering works have been undertaken under the umbrella of the International Fund for Saving the Aral Sea, with funding from the Government of Uzbekistan, on numerous natural and artificial water bodies. These works aim at landscaping the Amu Darya River delta for the restoration of aquatic and wetland ecosystems.

Uzbekistan also undertakes large-scale measures aimed at land reclamation and stabilization of soils of the dried bottom of the Aral Sea. These works include afforestation and planting desert vegetation, fixing moving sand of the seabed and absorbing salt. Between 2010 and 2018, forest plantations were established on 144,691 ha of the exposed seabed. The tree seedlings' survival rate varied between 37 and 44 per cent. According to expert estimates, some 1 million ha of the Southern Aral Sea region is suitable for afforestation works.

## **Recommended measures:**

- **Implement the 2019 NBSAP;**
- **Adopt the national wetland policy;**
- **Adopt ecosystem and species action plans and programmes;**
- **Mobilize resources for the implementation of biodiversity-related policy documents;**
- **Incorporate the concepts of the ecological network and ecological corridors in the legislation;**
- **Designate new PAs, paying due account to coverage of all main ecosystem types;**
- **Ensure the ecological connectivity and continuity of the PA network.**



## Energy and the environment

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

**Information on accidents occurring in the natural gas industry focuses on economic aspects rather than environmental impact.** Nevertheless, gas leakages cause the release of carbon monoxide, carbon dioxide, nitrogen oxides, sulfur compounds, methane, methanol and other pollutants. In the past few years, several natural gas processing facilities introduced new technologies to improve environmental protection.

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

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

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

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

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

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

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



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

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

**Table 6: Emissions from TPPs, 2010–2018, 1,000 tons**

	2010	2011	2012	2013	2014	2015	2016	2017	2018 (11 months)
SO <sub>2</sub>	44.8	49.9	48.2	69.6	59.4	49.8	50.7	54.5	41.4
NO <sub>x</sub>	31.2	41.8	53.8	57.4	61.8	63.8	65.2	55.7	53.3
PM	37.8	43.3	63.7	120.2	107.6	85.9	78.2	94.1	57.8

Source: SCEEP, 2019.

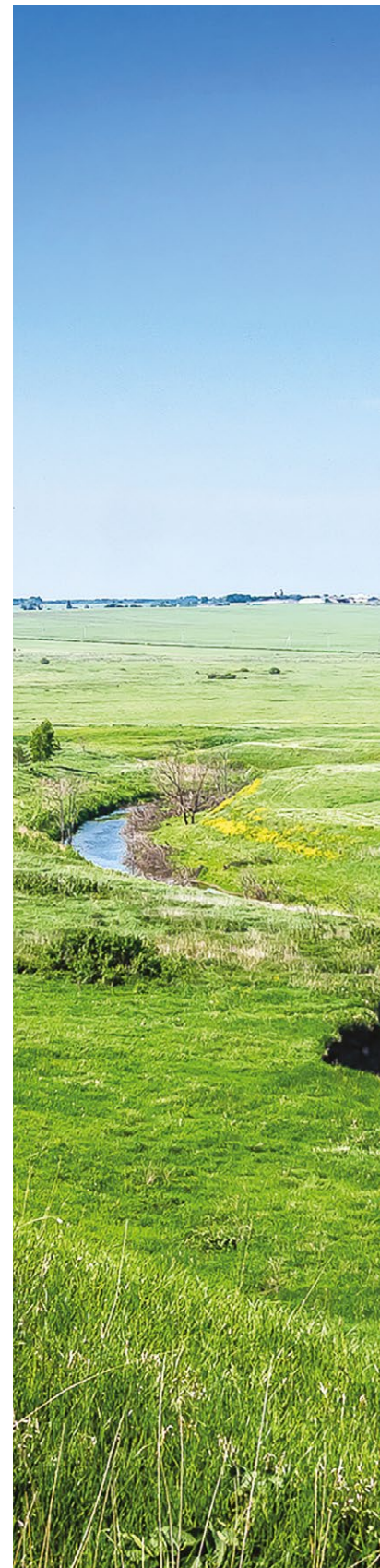
**Table 7: Estimated technical potential for RES, GWh/y**

	Technical	Used
Solar	2 058 000	0
Large and medium hydro	20 934	1 650
Small hydro	5 931	200
Wind	4 652	0
Biomass	1 496	0

Source: Artur Kochnakyan and others, "Uzbekistan: Energy/Power Sector Issues Note", Report No. ACS4146 (Washington, D.C., World Bank, 2013).

## Recommended measures:

- Gradually reduce the share of fossil fuels in energy production and consumption;
- Ensure modernization and technology upgrades at existing coal-fired power plants;
- Collect information about land and soil polluted by oil products;
- Analyze the environmental impacts of gas leakages;
- Properly address the environmental hazards of open pit mining;
- Further develop support schemes for renewable energy;
- Ensure use of solar energy potential;
- Ensure regular maintenance and upgrade of electricity transmission assets;
- Carry out an EIA for the proposed NPP in line with international standards and ensure transboundary consultations;
- Refrain from constructing an NPP in the territory of a Ramsar site.



## Agriculture and the environment

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

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

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

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

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

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

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

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

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

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



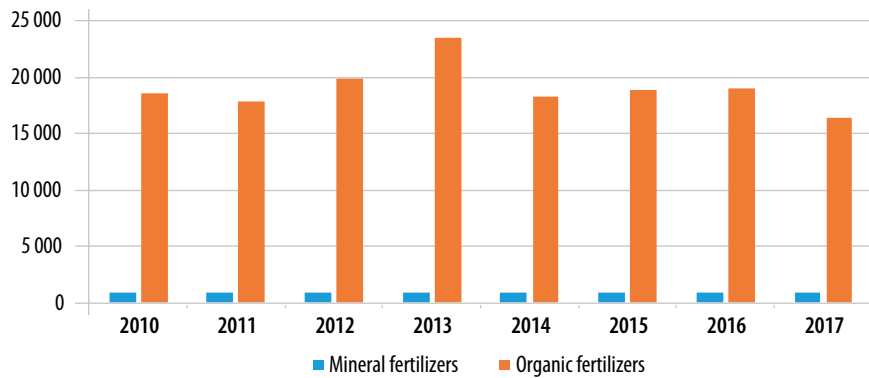
**Agricultural extension services are not systematically provided.** The development of extension services remains important for improving the sector's performance towards productive and sustainable agriculture and resilience to climate change, in line with target 2.4 of the 2030 Agenda.

**Table 8: Water use in agriculture, 2009–2017, km<sup>3</sup>**

	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Total water use</b>	<b>50.2</b>	<b>57.2</b>	<b>48.8</b>	<b>56.1</b>	<b>54.0</b>	<b>51.8</b>	<b>55.1</b>	<b>54.6</b>	<b>58.9</b>
of which:									
Agriculture	44.7	51.6	43.4	50.9	48.9	46.9	50.0	49.4	53.7
of which:									
Water losses	15.1	17.2	14.6	16.8	16.2	15.5	16.5	16.4	17.7

Source: Ministry of Water Management, 2019.

**Figure 7: Mineral and organic fertilizer use, 2010–2017, million tons**



Source: Ministry of Agriculture, 2019.

## Recommended measures:

- **Develop and adopt a legal framework for organic agriculture;**
- **Establish a national certification and labelling system for organic production;**
- **Enhance the promotion of water-saving irrigation techniques;**
- **Adopt a strategy on agriculture that considers environmental matters.**



## Transport and the environment

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

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

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

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

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

**The aviation sector is also in the midst of reforms.** Efforts in this area have focused on the management aspects, modernization of the fleet to reduce CO<sub>2</sub> and noise emissions and provision of flight services in accordance with international standards. Domestic aviation remains very limited.

**In terms of air pollution, the transport sector was the highest NO<sub>x</sub> emitter, accounting for 63 per cent of NO<sub>x</sub> emissions in 2016.** The sector was responsible for 9.6 per cent of TSP emissions in 2016.

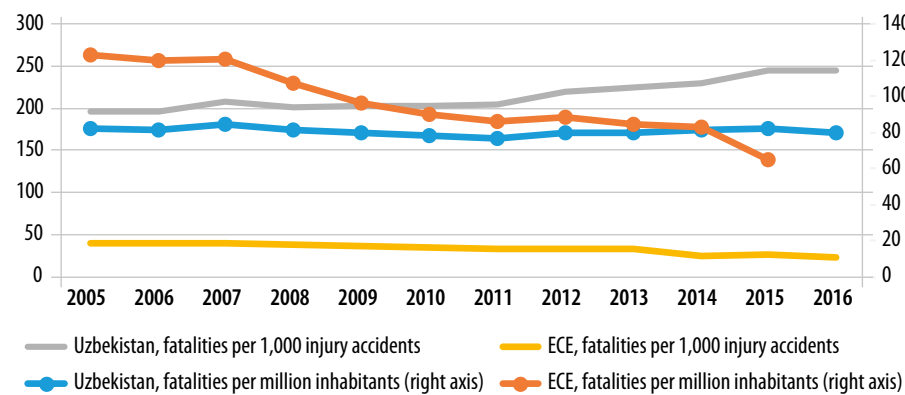
**Transport accounted for 12.4 per cent of GHG emissions from fuel combustion or 6.6 per cent of total GHG emissions without LUCF in 2012.** In 2012, the largest contributors to CO<sub>2</sub> emissions from transport were road vehicles (63 per cent).

**The transport sector is expected to grow dramatically in the coming decades, with resulting growth in CO<sub>2</sub> emissions.** The For Future Inland Transport Systems tool demonstrates opportunities for decoupling economic growth and CO<sub>2</sub> emissions in Uzbekistan.



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

**Figure 8: Road safety performance, 2005–2016**



Source: ECE transport statistics infocards, 2019.

## Recommended measures:

- **Control or reduce fossil fuel subsidies to ensure that higher quality fuels are used in vehicles;**
- **Move away from the use of lower quality fuels and take up alternative, low-carbon-fuelled vehicles;**
- **Encourage electromobility along with renewable electricity production;**
- **Improve access to, and use of, public transport in the urban environment;**
- **Incentivize the use of public transport and of alternative modes such as cycling;**
- **Further develop the railway network and facilitate the switch away from road transport;**
- **Develop a safe-system approach to road safety;**
- **Ensure enforcement of driving and road safety laws and regulations.**



## Industry and the environment

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

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

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

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

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

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

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

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

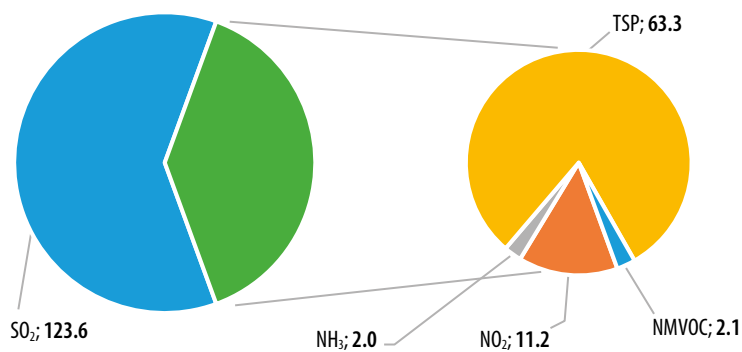
**Soils are severely degraded by mining activities, which remove large amounts of soil and vegetation for open pit mining.** Furthermore, soil contamination with heavy metals is observed in the areas located in close proximity to industrial enterprises.





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

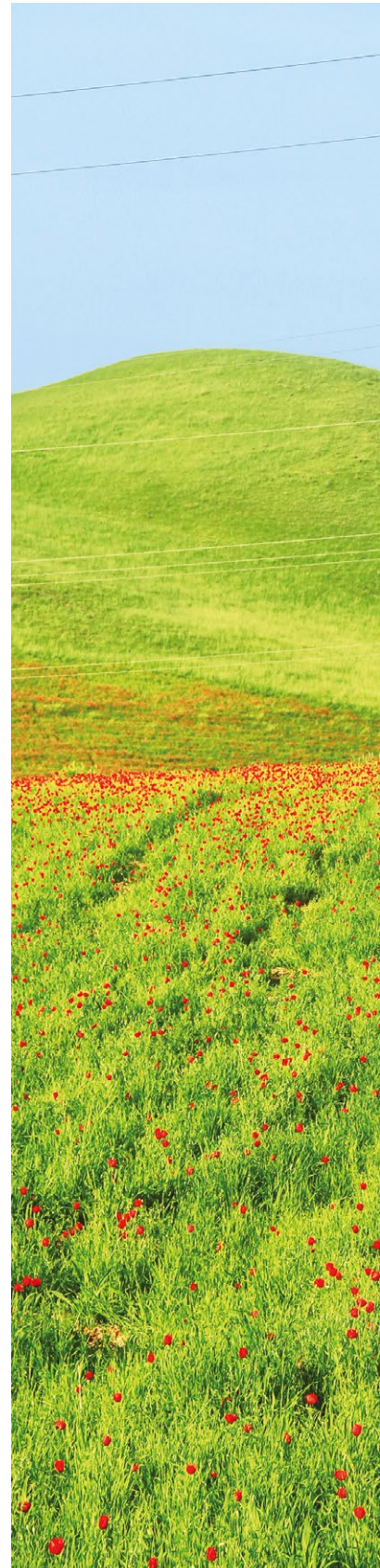
**Figure 9: Air emissions from industry, 2016, 1,000 tons**



Source: SCEEP, 2019.

## Recommended measures:

- **Ensure inclusion of environmental safeguards in new policy documents on industrial development;**
- **Create incentives for industrial enterprises to move towards green technology;**
- **Foster the creation of small and medium-sized enterprises and start-ups focused on green technology;**
- **Set out specific targets and indicators for industrial waste reduction and reuse;**
- **Create incentives for investments in wastewater treatment at industrial enterprises.**



## Human settlements and the environment

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

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

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

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

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

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

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

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

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

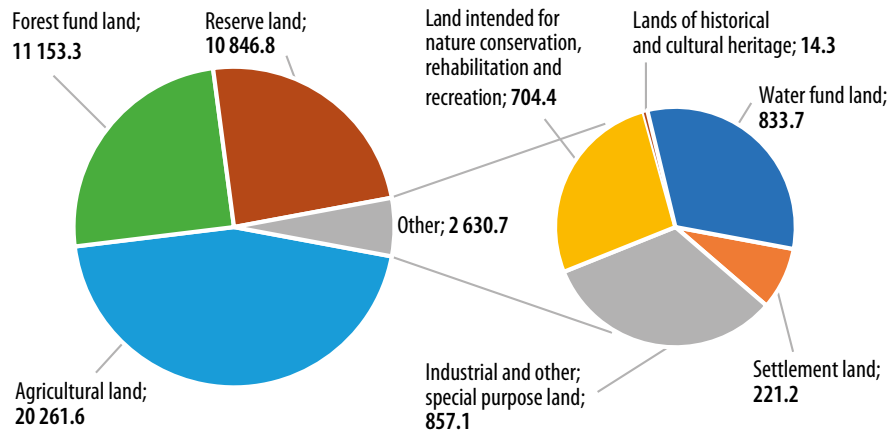
**Asbestos is extensively used as a construction material.** The population is largely not aware of its danger for human health.



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

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

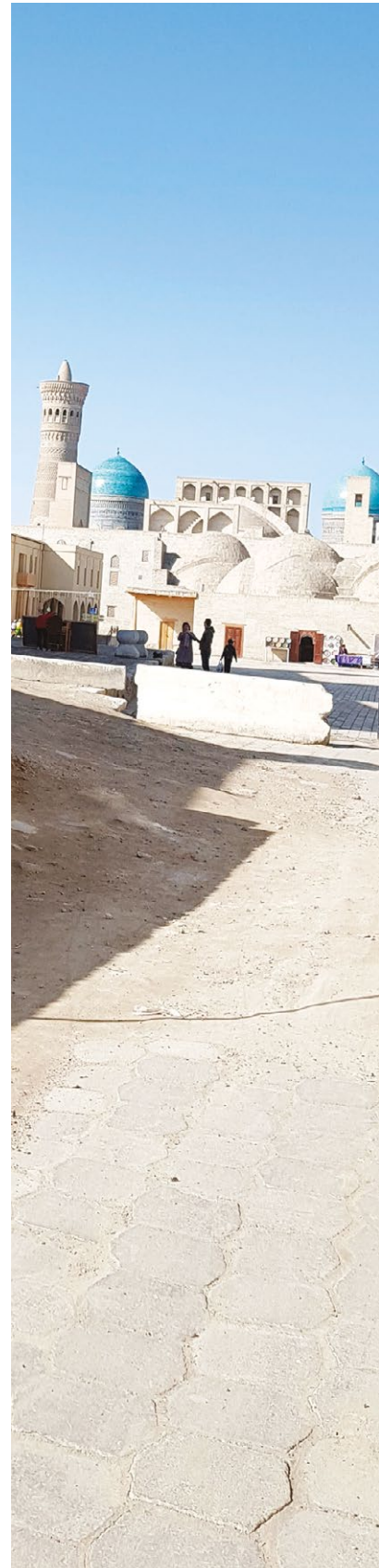
**Figure 10: Land use distribution by land category, 2018, 1,000 ha**



Source: State Committee on Land Resources, Geodesy, Cartography and State Cadastre, 2019.

## Recommended measures:

- **Introduce climate adaptation planning in urban areas and rural settlements;**
- **Fully exploit the potential for GHG emissions reduction from the housing sector;**
- **Ensure effective public participation in decision-making on projects to be implemented in inhabited areas;**
- **Take measures to safeguard the rights of inhabitants of residential buildings that receive demolition orders;**
- **Introduce energy efficiency standards for existing buildings;**
- **Ensure removal of existing industrial facilities from urban areas;**
- **Ban asbestos as a construction material;**
- **Consider developing urban ecological networks.**





## Health and the environment

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

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

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

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

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

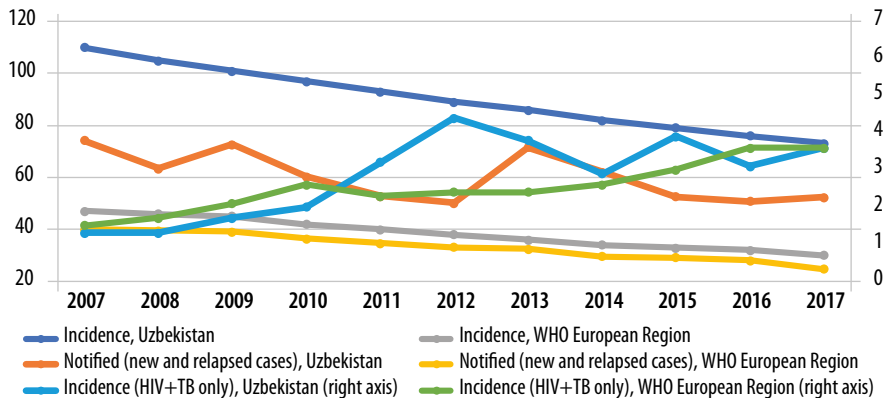
**Climate change in Uzbekistan is bringing excessive rates of cardiovascular and respiratory morbidity and mortality and acute intestinal infections.** Furthermore, a significant number of people live in areas prone to flash floods, mudflows, heatwaves, droughts and dust storms, which are becoming more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

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

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

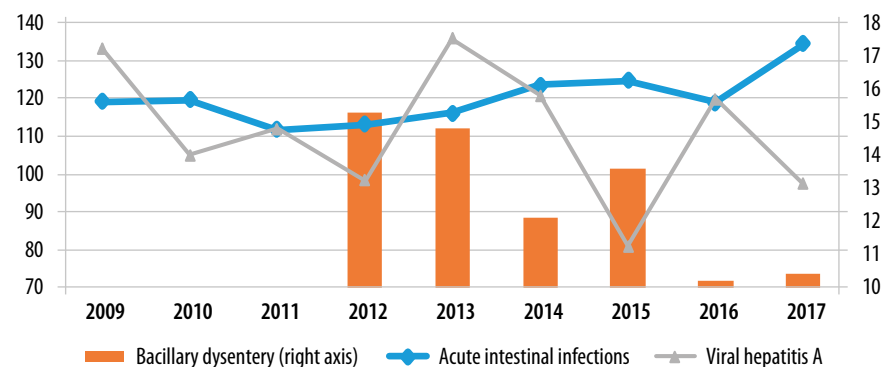
**The Aral Sea crisis has brought a large burden of disease and disability to the population, in particular in the Republic of Karakalpakstan and Khorezm Oblast.** In 2017, in Khorezm Oblast, morbidity from diseases of the nervous, circulatory, digestive and urological (kidney stones) systems was higher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

**Figure 11: Tuberculosis incidence, incidence among HIV-positive persons, 2007–2017, estimated rates per 100,000 population**



Source: WHO Global Health Observatory data repository, 2019; State Committee on Statistics, 2019.

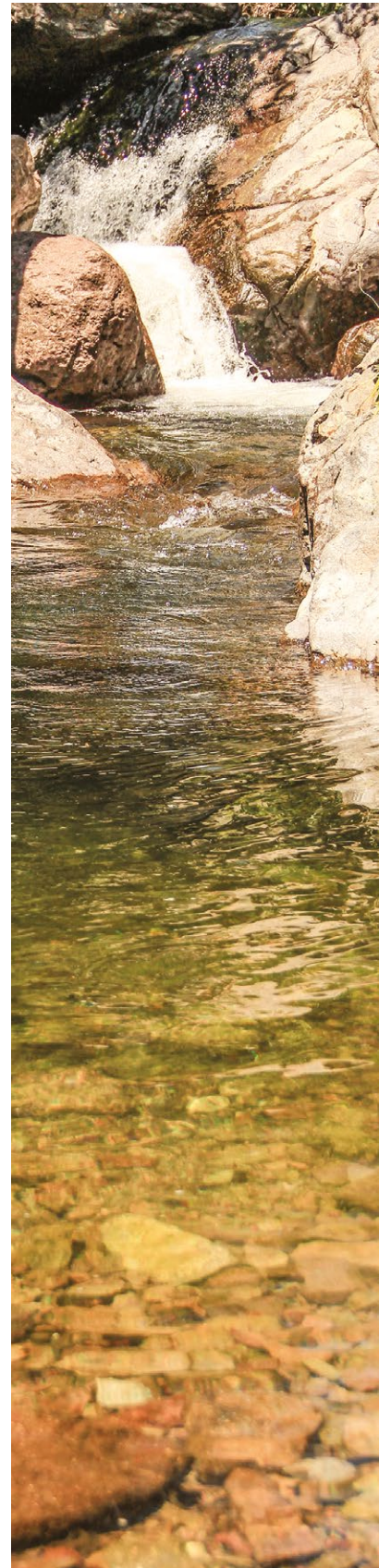
**Figure 12: Incidence of water-related acute intestinal, bacillary dysentery and viral Hepatitis A infections, 2009–2017, per 100,000 population**



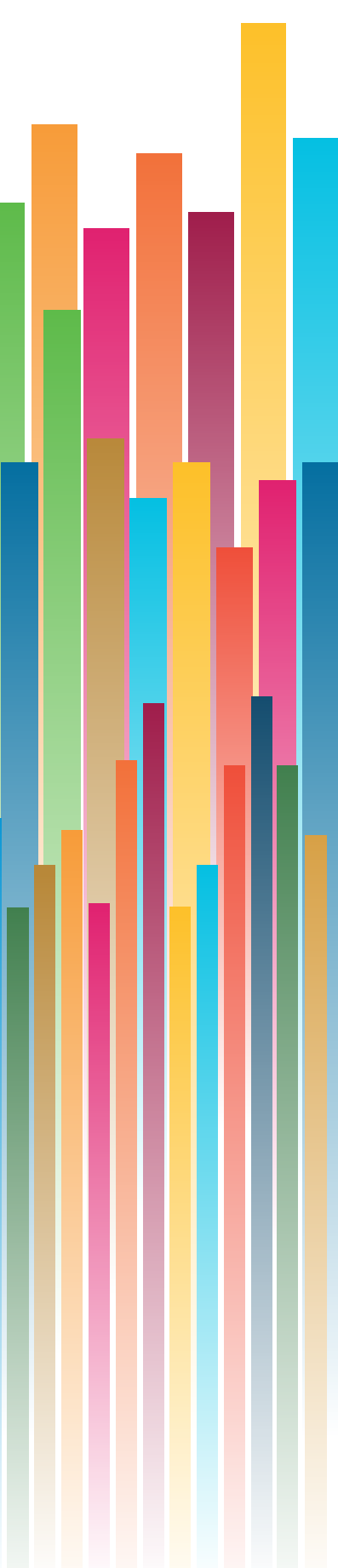
Source: State Sanitary and Epidemiological Surveillance Service, 2019; State Committee on Statistics, 2019.

## Recommended measures:

- **Improve access to preventive, therapeutic and diagnostic services for pregnant women and newborns, in particular in remote rural areas;**
- **Enhance infectious disease surveillance through the introduction of integrated service delivery;**
- **Improve skills to apply analytical epidemiological and public health methods to infectious and non-communicable diseases;**
- **Ensure progressive implementation of WHO water safety plans for small-scale water supplies across the country;**
- **Ensure operation of early warning systems, in particular for flash floods, mudflows and heatwaves;**
- **Ensure capacity-building on climate change, the environment and health.**



## The top 10 environmental achievements in the period 2010–2019

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

## The top 10 environmental priorities for the next 5–10 years

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

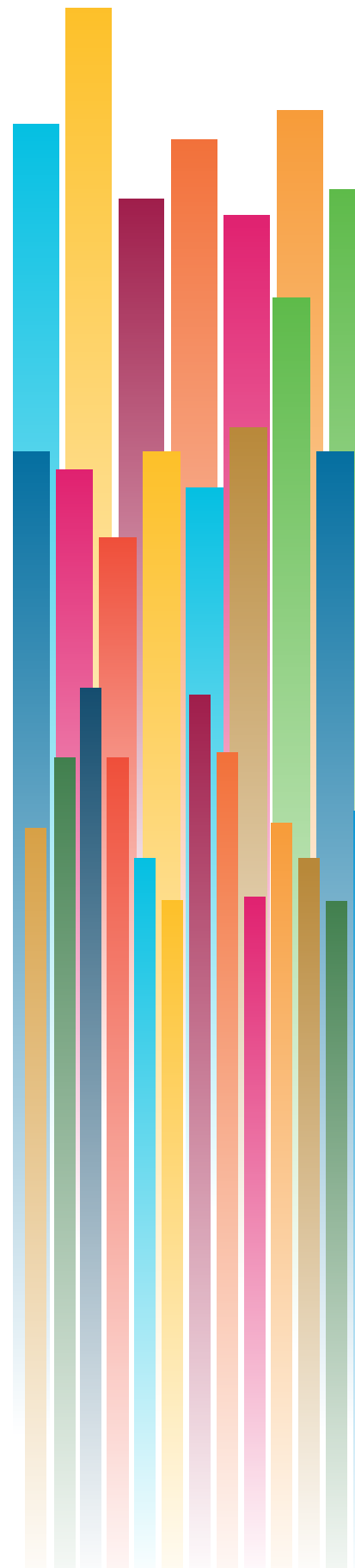
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 Goitered gazelle (*Gazella subgutturosa*) – Mariya Gritsina;  
 Greater flamingo (*Phoenicopterus roseus*) – Vadim Ni;  
 Aral Sea – UzA;  
 Bukhara City – Alessandra Fidanza.

Note: Where several pictures from different authors appear on a page, the top one is referred to as (a), the second as (b), etc.



# Uzbekistan

## Environmental Performance Reviews

### Third Review - Highlights

The United Nations Economic Commission for Europe Environmental Performance Review Programme assesses progress made by individual countries in reconciling their economic and social development with environmental protection, as well as in meeting international commitments on environment and sustainable development.

The third Environmental Performance Review of Uzbekistan examines the progress made by the country in the management of its environment since the country was reviewed in 2009–2010 for the second time. It covers legal and policy frameworks and environmental compliance assurance mechanisms and addresses the topics of greening the economy, environmental monitoring, public participation and education. Furthermore, the review addresses issues of specific importance to the country related to air protection, biodiversity and protected areas, as well as water, waste and chemicals management. It also examines the efforts of Uzbekistan to integrate environmental considerations into its policies in the energy, agriculture, transport, industry and health sectors and to make human settlements more environmentally friendly. The review further provides a substantive and policy analysis of the country's climate change adaptation and mitigation measures and its participation in international mechanisms. It makes suggestions for strengthening efforts towards a comprehensive and systemic response to sustainable development challenges and implementation of the 2030 Agenda for Sustainable Development.

The Highlights of the third Environmental Performance Review of Uzbekistan draw attention to the key findings of the review to inform and guide policymakers and representatives of civil society, as well as the international community, in their efforts to improve environmental management and to further promote sustainable development in Uzbekistan.

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