

Current state and development of the Shared Environmental Information System (SEIS)



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IMPROVED ENVIRONMENTAL MONITORING AND ASSESSMENT IN SUPPORT OF THE 2030 SUSTAINABLE DEVELOPMENT AGENDA IN SOUTH-EASTERN EUROPE, CENTRAL ASIA AND THE CAUCASUS

Led by the United Nations Economic Commission for Europe (UNECE) and implemented together with the United Nations Environment Programme (UNEP), this project aims to strengthen the national capacities of seven target countries: Armenia, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, North Macedonia and Tajikistan. The target countries have requested support to improve environmental monitoring and assessment for the 2030 Agenda, highlighting the need to enhance the comparability of environmental statistics in the ECE region.

The project will focus on the following expected accomplishments:

- strengthened capacities of national environmental authorities and statistical agencies to collect and produce required data and application of environmental indicators in accordance with the Shared Environmental Information System (SEIS) principles and practices;
- improved accessibility and use of regularly updated and high-quality environmental indicators, within the framework of SEIS, to respond to international indicator-based reporting obligations, including monitoring progress towards the Sustainable Development Goals.

The current report intends to address some of the national gaps and needs identified for this project on SEIS establishment and on the collection and management of environmental information and data for regular reporting, such as for the 2030 Agenda. The gap analysis also intends to address the use of environmental data and information in decision-making processes and communication.

The gap analysis review will serve multiple purposes, including defining existing gaps in data collection in the target country as a basis for developing training materials and as a background paper for two national workshops with national officials and experts responsible for environmental data collection. It will also contribute to the development of national roadmaps to monitor the SDGs for each target country to support country ownership and future endorsement and implementation.

This project is funded by the United Nations Development Account (UNDA) and implemented by UNECE Environmental Monitoring and Assessment Programme¹ in cooperation with the UNEP.

¹ See <http://www.unece.org/environmental-policy/environmental-monitoring-and-assessment/envema.html>

INTRODUCTION

The Republic of Tajikistan (Tajikistan) became an independent state after the demise of the Soviet Union in 1991. Tajikistan is located in the south-eastern part of Central Asia. By area, Tajikistan is the smallest state in Central Asia. In administrative and territorial terms, the country is divided into three regions and Dushanbe city with separate administrative status.

Three mountain systems – the Tien Shan, the Gissaro-Alai and the Pamir – cover 93% of the total area of the country. There are 947 rivers longer than 10 kilometres, and together they account for half the total river runoff in the Aral Sea basin. The main rivers are the Pyandj, the Vakhsh, the Kofarnihon, the Zarafshan and the Syr Darya.

Precipitation, snow melt and glaciers produce water resources of rivers. A network of protected areas is actively developed and covers more than 21% of the country area. Tajik National Park (the largest in the country) was recognized as UNESCO Natural World Heritage Site in 2013 (1).²

The country has limited oil and gas resources. About 95% of electricity is produced by hydroelectric power stations. Tajikistan has mineral reserves, including gold, silver, gemstones, uranium and coal, but only a small proportion of these resources is mined and used. Agriculture is the key sector of economy, but its productivity and profitability remain very low due to obsolete practices.

The main environmental problems of Tajikistan are:³

- waste management (including radioactive waste);
- soil degradation, salinization and erosion;
- irrational use and pollution of water and land resources;
- limited access to pure drinking water (as a result of water pollution);
- changes in hydrological regime as a result of climate change.

The Committee for Environmental Protection (CEP), which has the authority of State Service and is the main executive agency of Tajikistan, participates in unified state policy implementation in environmental protection, hydrometeorology and the sustainable use of natural resources. The Committee implements state control of environmental protection and environmental management (2).

STATUS AND DEVELOPMENT OF SEIS

A Shared Environmental Information System rests on three pillars – content, infrastructure and cooperation – and this assessment considers each in turn.

SEIS PILLAR I CONTENT

Current system of collection of environmental data

At the country level, the main organizations responsible for collection, production, storage and processing of environmental data and their availability are:

- the Committee for Environmental Protection, responsible for environmental monitoring implementation;
- CEP subdivisions – the State Agency for Hydrometeorology (atmospheric air quality, surface water quality, climate change, ozone layer), the Water Resources Protection Center, the National Biodiversity and Biosafety Center, the Analytical Control Center;
- the Agency on Statistics under President of the Republic of Tajikistan (atmospheric air emissions, water resources, wastes);
- the Forestry Agency (forests, flora and fauna, protected areas);
- the Ministry of Energy and Water Resources (MEWR);
- the Ministry of Agriculture;
- the Main Department of Geology under the Government of the Republic of Tajikistan.

Waste indicators are the most complicated for Tajikistan. There are serious gaps in the measuring and determination of wastes, and major problems in measuring and recycling household and construction waste. In addition, the basic data for key areas such as water, wastes, land, energy, and greenhouse gas emissions are weak (3).

² Reference materials are indicated by a number in parentheses and listed at the end of the report.

³ See https://studwood.ru/1258881/geografiya/ekologicheskie_problemy_tadzhikistana

Production of environmental indicators

Tajikistan has no unified platform for publishing the UNECE environmental indicators. The environmental indicators are partially produced by organizations under the CEP, and are published in statistical yearbooks and in the national report, "Tajikistan, Environment 2018", prepared with international help. The indicators can also be found on the Agency on Statistics website in the online demonstration system for the UNECE environmental indicators prepared with the support of the EU-funded FLERMONECA project and implemented by the EU using the UNECE set of environmental indicators (4).

Twenty-eight UNECE environmental indicators (19 from the main set and 9 additional) published in the last issues of the national report and statistical yearbook have been analysed using the SEIS criteria. Detailed assessment results are presented in Annex I.

The last national report showed progress in the production of environmental indicators, with a clear tendency to present them in accordance with the Revised UNECE Guidelines. Most of the indicators showed the data sources, the necessary details, metadata, visualizations and a narrative assessment. Actions taken to develop environmental policy were described. The data series typically cover the period from 2012 to 2017. The system provides the data in Tajik and Russian. A review reveals the following:

- the main set indicators have no data on "BOD and concentration of ammonium in rivers", "Nutrients in freshwater", "Land uptake", "Management of hazardous waste";
- the "Renewable freshwater resources" parameters do not meet the UNECE requirements (discharge values of the main rivers have been shown);
- "Final energy consumption" contains data on consumption of electric energy (instead of consumption of energy);
- "Emissions of pollutants into the atmospheric air", "Wastewater treatment facilities" and "Waste generation do not include all required data sets;
- the punctuality category shows some gaps, mainly in the lack of necessary details;
- the content and the presentation of indicators do not always include the possibilities of their wider application;
- the absence of a unified platform inhibits easy access to the indicators;
- indicators in the "Biodiversity" section are fully presented and meet almost all quality criteria;
- most indicators include no references to the international techniques of measurements and calculations ("compatibility" criterion).

The lack of information over the Internet and limited possibilities of direct contacts with experts and organizations did not allow the estimation of the indicators using the following SEIS quality criteria:

- systematic comparison of the data used with data from another sources;
- the use of data validation and revision procedures;
- feedback to estimate the compliance with user requirements and data enhancement;
- the availability of the state agencies' primary data for the users.

Use of environmental information

The environmental information collected by government agencies for decision-making is sent to higher authorities through periodic reporting. The use of environmental information in decision-making is not systemic. Environmental information related to hazardous events (which represent direct threat to human health or environment) is used by both state and local executive authorities for taking immediate measures to prevent or mitigate possible damage (5).

In order to raise awareness of interested organizations and citizens, the Agency on Statistics under the President of the Republic of Tajikistan publishes a statistical book, "Environmental Protection in the Republic of Tajikistan", in Tajik and Russian (6). The latest statistical book, published in 2017, includes tabulated data on some of the UNECE indicators for the period 2012-2017.

The national report, "Tajikistan. Environment 2018", which includes the section, "Environmental Indicators", was published in 2018 in Tajik and Russian (1).

Descriptive data on biodiversity are published in Russian and English on the website of National Biodiversity and Biosafety Center, established in accordance with the Decree of the Government of the Republic of Tajikistan No 392, dated 01.09.2003.⁴

Publications do not always provide sufficient environmental information and data. They should be supplemented with analysis of environmental situations, assessments and specific recommendations, relevant information, case studies and visual material. Most reports are compiled with international support, while national capacity remains weak (7).

⁴ See <http://www.biodiv.tj/category?cat=1>

Data collection

Environmental monitoring networks have an insufficient level of technical equipment, and are short of chemical reagents and fuel for field trips to monitoring sites. Thus, monitoring is carried out at a limited number of monitoring points and covers a limited range of controlled parameters on the pollution of air and water bodies. One atmospheric air quality monitoring station operates in automatic mode in Dushanbe.

A mobile station for monitoring air quality was purchased using project funds. Acquisition of data at other environmental monitoring sites is carried out manually (5).

The organizations and agencies responsible for collecting environmental data store the data mostly in hard copies. In general, the country has no mechanism for the accumulation of environmental data and for electronic data exchange.

Processing and analysis

Environmental monitoring data are not properly archived and processed (only where the environmental quality standards are exceeded and index values are available, without concentration values or conclusions). Some units and measurement parameters require clarification (4).

The National Biodiversity and Biosafety Center has a new electronic database that represents a new level of production, storage, organization and dissemination of a wide variety of information – factual and cartographic data, text, graphics, sound, photos and videos (4).

Climate data are being digitized, and automatic weather stations and hydrological stations are being introduced (4).

Dissemination of environmental information

The online version of the national report, "Tajikistan's Environment", has been published with support of UNEP and Zoï Environment Network. The data on 16 the UNECE environmental indicators of the main set and on 7 additional indicators are presented in the section "Environmental indicators" in PDF and XLS formats.

In addition, environmental indicators and statistics are available online as a prototype, developed in 2015 in the framework of the FLERMONECA project.⁵

The absence of a unified platform for publishing environmental indicators makes their widespread use difficult.

SEIS PILLAR III COOPERATION

Basis and practice of inter-agency exchange of environmental information (focus on data producers)

Collaboration and information exchange between data producers are insufficient and should be intensified. Currently, there are no legal or administrative provisions for the production and exchange of environmental information (7).

Cooperation on inter-agency data exchange remains weak: websites provide data sharing and open access to environmental information to a small extent. Tajikistan publishes an environmental report irregularly (4). The most recent environmental report was published in 2010 (5).

Inter-sectoral exchange: producers vs. users of information

The main users of environmental information are environmental authorities, scientific institutions, higher education institutions, domestic environmental organizations and citizens. The types of information most in demand are generalized or averaged monthly and annual environmental data; daily, weekly and monthly forecasts and scenarios; thematic reviews (on waste, biodiversity, climate change); assessments of environmental impact of infrastructure or construction projects; popular presentations of environmental problems (posters, videos); and graphs and charts based on environmental and statistical data (4).

The small amount of information that exists at the regional and city levels is practically unavailable. The UNDP-GEF environmental monitoring project partially addresses this issue, and includes the provision of technical equipment (4).

International exchange and reporting

Tajikistan is a party to 11 international environmental protection conventions and agreements, and is involved in a number of international and regional processes. Tajikistan fulfils its international obligations on reporting, largely with the financial support of international organizations. The country is actively involved in the UNECE

⁵ See <http://www.gksintranet.tj/ecostat/>

processes. Tajikistan experts prepared three reviews on environmental performance. The last review, containing up-to-date and detailed environmental information, was published in 2017 (4).

Tajikistan is a member of the Interstate Environmental Council of the CIS (including the Statistical Committee and the Interstate Council for Hydrometeorology). The Council provides assistance in the creation of an interstate environmental monitoring system for collecting, assessing, forecasting and sharing environmental information.

At the regional level, the national hydrometeorological services of Central Asian countries exchange meteorological, hydrological and environmental data and forecasts, but other parties (with some exceptions) are not allowed to use these data (3).

Tajikistan cooperates with Afghanistan on hydrology and environmental issues along the Panj and Amu Darya rivers. Currently the data exchange process goes from Tajikistan only (4).

SEIS PRINCIPLES AND CONCLUSIONS

Tajikistan is working to implement the SEIS principles, but progress is still rather slow (7).

An electronic reporting system has been developed and installed in the departments of the Committee for Environmental Protection. The system interface allows users to work with many types of UNECE environmental indicator data.

The Zoï Environment Network analysis of the implementation of SEIS in Tajikistan (4) finds that:

- information is available to the public in the national languages, and the official environmental newspaper is published twice a month;
- organizations that process and store the information they collect do not often use an electronic format so the exchange of data is difficult;
- a limited set of information is widely available for multiple applications;
- a limited set of information is available for all users;
- Tajikistan has no obligations to regularly prepare national reports on the state of the environment, and information for international reporting is provided to interested parties by authorities and specialized organizations;
- the limited information at the local level is of poor quality.

The plans to further implement the SEIS principles in Tajikistan (8) include:

- improving monitoring and providing reliable statistical information to organizations at various levels for decision-making;
- supporting the further development of inventories of natural resources and the assessment of natural resource potential;
- strengthening the existing networks for monitoring the emissions of pollutants into the atmospheric air, ambient air quality in urban areas, drinking water quality, biodiversity and forests by providing modern analytical equipment, instruments and materials;
- creating a portal of environmental data and information operating in the “single window” mode in accordance with SEIS principles and using GIS technologies;
- improving online access to environmental information and data.
-

SDG MONITORING AND REPORTING FRAMEWORK

Country approach to Sustainable Development Goal (SDG) reporting

In 2017 Tajikistan started preparation of a Voluntary National Review that will be presented at the High-Level Political Forum on Sustainable Development.⁶

The main objective of the review is to analyse progress in the implementation of the SDGs at the national level, as well as the inclusion of the 2030 Agenda in the national development policy through broad stakeholder participation.

The review focuses on poverty eradication through improved living standards. The process of nationalization of the SDGs is considered from the point of view of achieving the two strategic development goals defined in the National Development Strategy for the period until 2030 (9):

- 1) ensure energy security and efficient use of electricity (SDG 7);
- 2) ensure food security and access to quality nutrition (SDG 1).

⁶ See <https://sustainabledevelopment.un.org/memberstates/tajikistan>

Other tasks related to the SDGs are also reflected in the review as cross-sectoral issues (gender equality, industrialization, access to water and climate change).

Overview of the readiness of UNECE indicators for SDG monitoring and reporting

This analysis could not sufficiently investigate Tajikistan’s capacity and ability to use the UNECE environmental indicators for monitoring SDGs and green growth (7), and could find no data on the development of national indicators for SDG monitoring and reporting. The project consulted “Measuring SDG Progress in Asia and the Pacific: Is there enough data?” by the UN Economic and Social Commission for Asia and the Pacific (ESCAP) for information on Tajikistan from the global database of SDG indicators as of 2017 (10). (See Annex II for details).

Indicators 14.1.1 “Index of coastal eutrophication and floating plastic debris density” and 14.5.1 “Protected marine area” are not relevant to Tajikistan.

For 18 of 31 global environmental indicators for the SDGs, numeric data characterizing their implementation in Tajikistan have been provided.

There is no information to characterize 13 of the global indicators even on the ESCAP website.

The data for the global environmental indicators are well presented for the following SDG targets:

- target 3.9 “By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination” (indicators 3.9.1; 3.9.2; 3.9.3);
- target 7.1 “By 2030, ensure universal access to affordable, reliable and modern energy services” (indicators 7.1.1; 7.1.2; 7.1.3);
- target 9.1 “Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all” (indicators 9.1.2; 9.1.4).

There are meaningful data describing biodiversity indicators related to SDG 15 “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”.

On the other hand, some data do not quite correctly reflect the content of the global environmental indicators for the SDGs. For instance, data on share of clean fuels and technologies in the total final energy consumption are presented for indicator 7.2.1 “Increase global percentage of renewable energy”. And data on annual mean concentrations of PM_{2.5} in the atmospheric air over the whole country are used to characterize the indicator “Annual mean levels of fine particulate matter (e.g. PM_{2.5} and PM₁₀) in cities (population weighted)”.

This analysis could not determine how the UNECE environmental indicators are used in the development of national indicators for monitoring and reporting on the application of the global indicators for the SDGs in Tajikistan.

Tajikistan needs to investigate the potential use of UNECE environmental indicators to monitor progress in achieving the SDGs (7).

GAPS AND SUGGESTED ACTIONS

The table below summarizes the gaps in Tajikistan’s environmental information, and suggests actions for moving forward. The country needs to take the lead on the longer-term actions, some of which may require long-term support from the international community. The short-term actions can and should occur quickly, supported in some cases by international partners through the UNDA project.

Gaps	Long-term actions not directly associated with the UNDA Project	Short-term actions that can be taken by UNDA Project partners
Absence of unified platform for allocation and presentation of UNECE environmental indicators in interactive mode		Assistance in development of interactive mode for presentation of the UNECE environmental indicators
Irregular preparation and publication of national reports on the state of the environment	Adopt legislation on regular preparation and publication of national reports on the state of the environment	Methodological assistance in the preparation of state environmental reports

Limited use of environmental information by government agencies in decision-making	Use more environmental information and data in decision-making	
Limited access to environmental information	Provide open access to environmental information	
Problems with the data exchange between agencies	Improve inter-agency cooperation in data exchange, official protocols, information systems	
Environmental information in some organizations stored in paper (hard copy)	Transition environmental data to electronic format, and start using data in that format	Methodological assistance in digitizing environmental information
Insufficient amount of available environmental information produced locally, suitable for comparative analysis at different geographic levels	Improve the production of environmental information produced locally	
Low level of implementation of modern internationally accepted methods of analysis, calculation and recommendations in environmental monitoring (air emissions, water use, energy, waste management)		Training to maintain the required level of qualification and the use of international standards in the implementation of environmental monitoring
No data in the UNECE environmental indicators on the quality of surface water and groundwater	Resume the monitoring of water quality and the publication of related data	Assistance in resuming the water quality monitoring system
No regular monitoring of waste	Develop and implement monitoring, accounting and reporting system for waste indicators	Methodological assistance in creating a waste management system at the state level
Absence of automated systems for measuring environmental parameters and lack of modern methods of analysis	Modernize and equip the national hydrometeorological service and introduce modern methods of analysis; develop and implement automated systems for measuring environmental parameters	
Incomplete data sets for some UNECE environmental indicators	Increase the number of data sets for the UNECE environmental indicators	
No mechanism for nationalizing the global environmental indicators for the SDGs or for the use of the UNECE indicators for these purposes		Methodological assistance for the development of a matrix and for monitoring and reporting on environmental indicators for the SDGs
Provision of some environmental information to users on a paid basis	Cancel fees for providing environmental information to interested organizations and the public	

Tajikistan seeks to achieve progress in the production of environmental indicators in accordance with the revised UNECE Guidelines. A 2018 national report on the state of the environment demonstrates that the indicators include the necessary details, and discusses the measures taken for the development of environmental policy. Metadata, visualizations and textual analysis are available, but the lack of an integrated platform limits access to the indicators. The indicators characterizing the quality of water bodies and waste management are the most problematic.

The lack of legal and administrative provisions for the production and exchange of environmental information precludes the systemic use of the information. Most environmental information is stored on paper, and there is no mechanism for the electronic accumulation and sharing of environmental data. The level of technical equipment of the environmental monitoring network is insufficient.

Tajikistan is making some efforts to implement the SEIS principles. These efforts include improving the environmental monitoring system, providing it with modern technical means, creating a legislative and regulatory framework, ensuring inter-agency cooperation, and improving access to environmental information. Without the assistance of relevant international organizations and donors, however, the country's efforts will not be enough.

Tajikistan applies the environmental indicators related to the SDGs primarily to the issues of efficient use of electricity, access to water and climate change, but the project could find no data on the development of national environmental indicators or the use of UNECE environmental indicators for monitoring and reporting on the SDGs.

In the short term, the UNDA project may be able to support Tajikistan through advice and operational and methodological guidance on the development of the national environmental information system, and on monitoring, indicators and environmental assessment and reporting. This support may include training the staff of responsible organizations in the specifics of the best global and European practices.

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ANNEX I EVALUATION OF SELECTED UNECE INDICATORS AGAINST THE SEIS ASSESSMENT FRAMEWORK CRITERIA

Core indicators

Indicators (no. of data flows)	Accuracy	Relevance	Timeliness & punctuality	Accessibility	Clarity	Comparability	Inst / org arrange- ments
Air emissions (14)	-/+	-/+	+	+/-	+	+/-	
Air quality (4)	+/-	+/-	+	+/-	+/-	-/+	
OSD consumption (8)	+	-/+	+	-/+	-/+	+/-	
Air temperature (1)	+	+	+	+	+	+	
Precipitation (1)	+	+	+	+	+	+	
GHG emissions (2)	+	+	-/+	-/+	+	+/-	
Renewable water res (1)	-	-	-	-	-	-	
Water abstraction (3)	+/-	+	+	+/-	+	+/-	
Water use (4)	+/-	+/-	+	+/-	+	+/-	
Water supply (1)	+/-	-/+	-/+	-/+	-	+/-	
BOD and NH ₄ in rivers (2)	n/d	n/d	n/d	n/d	n/d	n/d	
Nutrients in freshwater (5)	n/d	n/d	n/d	n/d	n/d	n/d	
Pop. connected to WWT (1)	+	+/-	+	+/-	-/+	+/-	
WWT facilities (1)	-/+	-/+	+	-/+	-/+	+/-	
Polluted waste water (2)	+/-	+/-	+	+/-	+/-	+/-	
Protected areas (1)	+	+	+	+	+	+	
Forests and woodland (1)	+	+	+	+	+	+/-	
Threatened and protect. species (2)	+	+	+	+	+	+	
Land uptake (2)	n/d	n/d	n/d	n/d	n/d	n/d	
Final energy consumption (2)	-	-/+	+	-/+	+/-	-/+	
Primary energy supply (2)	+/-	+/-	+	+/-	+/-	+/-	
Waste generation (2)	-/+	-/+	-/+	-/+	+/-	-/+	

Hazardous waste management (6)	n/d	n/d	n/d	n/d	n/d	n/d
Additional indicators						
Household water use per capita (3)	-/+	-/+	-/+	-	-/+	+/-
Water losses (3)	-/+	-/+	-/+	-	-	+/-
Trends in the number and distribution of selected species (4)	+	+	+	+	+	+
Irrigation*	+	n/d	+	+/-	+/-	+/-
Energy intensity (3)	+/-	+/-	+	+/-	+/-	+/-
Renewable energy consumption (2)	+	+	+	+/-	+/-	+/-
Passenger transport (3)	+	+/-	+	+/-	+/-	+/-
Freight transport (3)	+	+/-	+	+/-	-/+	+/-
Waste reuse and recycling (3)	-/+	-	-/+	-/+	-/+	-/+

* indicator not reviewed by the UNECE Joint Task Force on Environmental Indicators

THE APPLIED RATING SCALE

- + all is well
- +/- not all is well
- / + all is not that well
- all is not well

Explanations of the criteria and the further analysis are provided in Annex III.

Waste data are taken from the statistical compilation "Environmental Protection in the Republic of Tajikistan", published by the Statistical Agency under the President of the Republic of Tajikistan: http://stat.wv.tj/publications/July2018/hifzi_muhiti_zist_-_2017_ohiron.pdf. All other indicators are on a single platform of the national report on the state of the environment of the Committee for Environmental Protection under the President of the Republic of Tajikistan: <http://envreport.hifzitariyat.tj/>.

ANNEX II STATUS AND ASSESSMENT OF SDG ENVIRONMENTAL INDICATORS

SDG indicators	National indicators of Tajikistan	National indicators monitoring data	UNECE Indicators
SDG target 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil			
2.4.1 Proportion of agricultural area under productive and sustainable agriculture	No data		F1. Irrigation (indicator is not currently developed) F2. Fertilizer consumption F3. Gross nitrogen balance (indicator is not currently developed)
SDG target 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination			
3.9.1 Mortality rate attributed to household and ambient air pollution	Mortality rate attributed to ambient air pollution per 100 000 population: Mortality rate attributed to household air pollution per 100 000 population:	89,5 115,3 45,6 63,0	A1. Emissions of pollutants into the atmospheric air A2. Ambient air quality in urban areas

	Crude death rate attributed to ambient air pollution per 100 000 population: Crude death rate attributed to household air pollution per 100 000 population:		
3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene	Mortality rate attributed to unsafe WASH service per 100 000 population:	7,5	C5. Water supply industry and population connected to water supply industry C6. Connection of population to public water supply C9. Drinking water quality C14. Population connected to wastewater treatment
3.9.3 Mortality from unintentional poisoning	total per 100 000 population: female per 100 000 population: male per 100 000 population:	1,9 1,2 2,6	F4. Pesticide consumption
SDG target 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all			
6.1.1 Proportion of population using safely managed drinking water services	Population using safely managed drinking water: total % of population:	47,4	C5. Water supply industry and population connected to water supply industry C6. Connection of population to public water supply C9. Drinking water quality
SDG target 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations			

6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water	Population with basic hand-washing facilities on premises: % of population: % of urban population: % of rural population: Population practicing open defecation: % of population: % of urban population: % of rural population:	72,5 88,2 66,8 0,1 0,1 0,1	C4. Household water use per capita C5. Water supply industry and population connected to water supply industry C14. Population connected to wastewater treatment
SDG target 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally			
6.3.1 Proportion of wastewater safely treated	No data		C16. Polluted (non-treated) wastewaters
6.3.2 Proportion of bodies of water with good ambient water quality	No data		C10. BOD and concentration of ammonium in rivers C11. Nutrients in freshwater
SDG target 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity			
6.4.1 Change in water use efficiency over time	No data		C3. Total water use C4. Household water use per capita C7. Water losses
6.4.2 Level of Water Stress: freshwater withdrawal as a proportion of available freshwater resources	No data		C1. Renewable freshwater resources C2. Freshwater abstraction
SDG target 6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes			
6.6.1 Change in the extent of water-related ecosystems over time	No data		D1. Protected areas D2. Biosphere reserves and wetlands of international importance (indicator is not currently developed)

SDG target 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services			
7.1.1 Proportion of population with access to electricity	Access to electricity: % of population:	100,0	G5. Final electricity consumption (indicator is not currently developed)
SDG target 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix			
7.2.1 Renewable energy share in the total final energy consumption	Renewable energy share of total final energy consumption: % of TFC:	40,7	G1. Final energy consumption G4. Renewable energy consumption
SDG target 7.3 By 2030 double the global rate of improvement in energy efficiency			
7.3.1 Energy intensity measured in terms of primary energy and GDP	Total primary energy supply (TPES): MJ per unit of GDP (2011 PPP):	5,5	G3. Energy intensity
SDG target 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all			
9.1.2 Passenger and freight volumes, by mode of transport	Air transport passengers carried: million people: million passenger-km: Air transport freight: million ton-km: Railway passenger kilometre: million passenger-km: Railway freight: million ton-km: Road transport, passenger volume: million passenger-km: Road transport freight: million ton-km:	1 2030 0.1053761 23 1635 2 822	H1. Passenger transport demand H2. Freight transport demand

	Mail volume by air transport: million ton-km:	0	
SDG target 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities			
9.4.1 CO ₂ emission per unit of value added	CO ₂ emissions intensity: kg CO ₂ eq. per USD (2005 PPP):	0,2	B3. Greenhouse gas emissions
	CO ₂ emissions per unit of manufacturing value added: kg per constant USD:	0,2	
SDG target 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries			
11.3.1 Ratio of land consumption rate to population growth rate	No data		E1. Land uptake E2. Area affected by soil erosion
SDG target 11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management			
11.6.1 Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban waste generated, by cities	No data		I3. Waste reuse and recycling I4. Final waste disposal
11.6.2 Annual mean levels of fine particulate matter (i.e. PM2.5 and PM10) in cities (population weighted)	Annual mean concentration of PM2.5, urban: micrograms per m ³ :	50,7	A2. Ambient air quality in urban areas
	Annual mean concentration of PM2.5, total: micrograms per m ³ :	40,8	
SDG target 12.2 By 2030, achieve the sustainable management and efficient use of natural resources			
12.2.1 Material footprint, material footprint per capita,	volume total million tons: tons per capita: Intensity kg per 1 US dollar (2005 GDP):	13,6 1,8 4,3	C2. Freshwater abstraction D3. Forests and other wooded land

and material footprint per GDP			E1. Land uptake
12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	volume total million tons: tons per capita: % change per annum: Intensity kg per 1 US dollar (2005 GDP):	19,0 2,5 7,2 6,0	C3. Total water use G1. Final energy consumption G5. Final electricity consumption (indicator is not currently developed)
SDG target 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment			
12.4.2 Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment	No data		I2. Management of hazardous waste I3. Waste reuse and recycling
SDG target 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse			
12.5.1 National recycling rate, tons of material recycled	No data		I2. Management of hazardous waste I3. Waste reuse and recycling I4. Final waste disposal
SDG target 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution			
14.1.1 Index of coastal eutrophication and floating plastic debris density	For Tajikistan the indicator is not relevant. The country has no outlet to the sea.		C12. Nutrients in coastal seawaters
SDG target 14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information			
14.5.1 Coverage of protected areas in	For Tajikistan the indicator is not relevant. The country has no outlet to the sea.		D1. Protected areas

relation to marine areas			
SDG target 15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements			
15.1.1 Forest area as a proportion of total land area	% of land area:	3,0	D3. Forests and other wooded land
15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type	Protected important sites for terrestrial biodiversity: % of important sites:	21,0	D1. Protected areas
	Protected important sites for freshwater biodiversity: % of important sites:	34,6	
SDG target 15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally			
15.2.1 Progress towards sustainable forest management	Above ground biomass in forest million tons	4,0	D3. Forests and other wooded land
	Forest area with long-term management plan: % of forest areas:	5,0	
	Forest area within legally established protected area: % of forest areas:	20,4	
SDG target 15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation neutral world			
15.3.1 Proportion of land that is degraded over total land area	No data		E2. Area affected by soil erosion
SDG target 15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development			
15.4.1 Coverage by protected areas of important sites for mountain biodiversity	% of important sites:	19,5	D1. Protected areas

SDG target 15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species			
15.5.1 Red List Index	Index	1,0	D4. Threatened and protected species
	Threatened number of species:	44	
SDG target 15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species			
15.8.1 Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien	No data		D6. Invasive alien species (indicator is not currently developed)
SDG target 15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts			
15.9.1 Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011-2020	No data		D4. Threatened and protected species