

Working Group on Environmental Monitoring and Assessment

Twenty-fifth session, Geneva and online, 2-3 May 2023

Agenda Item 9. Progress in environmental monitoring and assessment, including institutional and regulatory mechanisms and infrastructure at the national level

Major actions taken in Armenia, 2022-2023

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CONTENT



- Environmental reports, analyses and assessments
- Environmental indicators
- Data quality assurance and control, data management
- Data policy & institutional and regulatory mechanisms & technical solutions for data exchange
- Improvements of national monitoring networks and systems
- Digitalization & digital transformation related to environmental information
- Remaining challenges
- Main issues to be addressed and supported

ENVIRONMENTAL REPORTS, ANALYSES AND ASSESSMENTS



Statistical publications

- National Statistical yearbooks, 2022
- Environment and Natural Resources in the Republic of Armenia for 2021 (Statistical publications)
- Marzes of the Republic of Armenia and Yerevan city in figures, 2022
- Atlas the Republic of Armenia by the regions and Yerevan city, 2022

National environmental reports

- State of the Environment, Annual Bulletin is developed and published annually.

In 2022, some environmental indicators such as C10, C11 and C2 will take place in the Bulletin.

Specialised reports – climate

- National Greenhouse Gas Inventory Report of Armenia 1990-2017
- UNFCCC Armenia's Third Biennial Update Report
- The National Greenhouse Gas Inventory Report for 2018-2019 was drafted in 2022 (under review process), and the Report for 2020-2021 will be developed in 2023.

Specialised reports – air pollution ([in Armenian](#))

Specialised reports – water quality ([in Armenian](#))

Specialised reports – Biodiversity

- 6th National reports on UN Biodiversity convention ([in Armenian](#))

Air Emission Inventory report and Informative Inventory report

under the obligation LRTAP convention were prepared and submitted in 2023.

UNECE indicators

	Armenia
A. Air pollution and ozone depletion	3
A1. Emissions of pollutants into the atmospheric air	x
A2. Ambient air quality in urban areas	x
A3. Consumption of ozone-depleting substances	x
B. Climate change	3
B1. Air temperature	x
B2. Atmospheric precipitation	x
B3. Greenhouse gas emissions	x
C. Water	13
C1. Renewable freshwater resources	x
C2. Freshwater abstraction	x
C3. Total water use	x
C4. Household water use per capita	x
C5. Water supply industry and population connected to water supply industry	x
C6. Connection of population to public water supply	x
C7. Water losses	x
C8. Reuse and recycling of freshwater	x
C9. Drinking water quality	x
C10. BOD and concentration of ammonium in rivers	x
C11. Nutrients in freshwater	x
C12. Nutrients in coastal seawaters	
C13. Concentrations of pollutants in coastal seawater and sediments (except nutrients)	
C14. Population connected to wastewater treatment	x
C15. Wastewater treatment facilities	x
C16. Polluted (non-treated) wastewaters	x
D. Biodiversity	6
D1. Protected areas	x
D2. Biosphere reserves and wetlands of international importance/place holder	x
D3. Forests and other wooded land	x
D4. Threatened and protected species	x
D5. Trends in the number and distribution of selected species	x
D6. Invasive alien species/place holder	x
E. Land and soil	2
E1. Land uptake	x
E2. Area affected by soil erosion	x
F. Agriculture	4
F1. Irrigation/place holder	x
F2. Fertilizer consumption	x
F3. Gross nitrogen balance	x
F4. Pesticide consumption	x
G. Energy	6
G1. Final energy consumption	x
G2. Total primary energy supply	x
G3. Energy intensity	x
G4. Renewable energy consumption	x
G5. Final electricity consumption/place holder	x
G6. Gross electricity production/place holder	x
H. Transport	2
H1. Passenger transport demand	x
H2. Freight transport demand	x
H3. Composition of road motor vehicle fleet by fuel type	
H4. Age of road motor vehicle fleet	
I. Waste	3
I1. Waste generation	x
I2. Management of hazardous waste	x
I3. Waste reuse and recycle	x
I4. Final waste disposal	x
J. Environmental financing	1
J1. Environment protection expenditure	x
Total	43

Environmental - Economic Accounts

Water Accounts

Hybrid water supply table

Hybrid water use table

Key Indicators

Physical water use and supply matrix inside economy

Physical water use and supply table

Mining of solid minerals by indicators and years by minerals

Life Quality

Annual mean levels of fine particulate matter in cities

Composite indicator of Life Quality related to the environment

Environmental satisfaction of population

Mortality rate attributed to household and ambient air pollution

Mortality rate attributed to unintentional poisoning

Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene

Number of deaths, persons missing, who survived and evacuated attributed to disasters

Proportion of population attributed to exceedance of air quality standards in urban areas

Proportion of population using safely managed drinking water services

Composite indicator of Life Quality related to the environment

ENVIRONMENTAL INDICATORS

SDG indicators

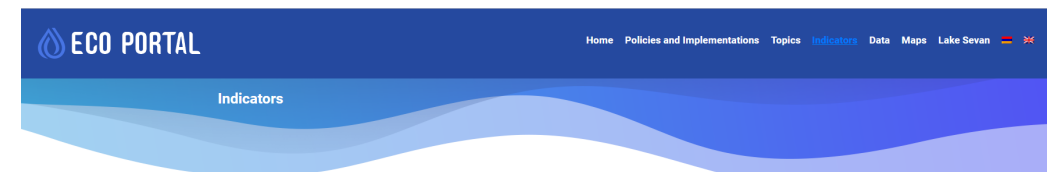
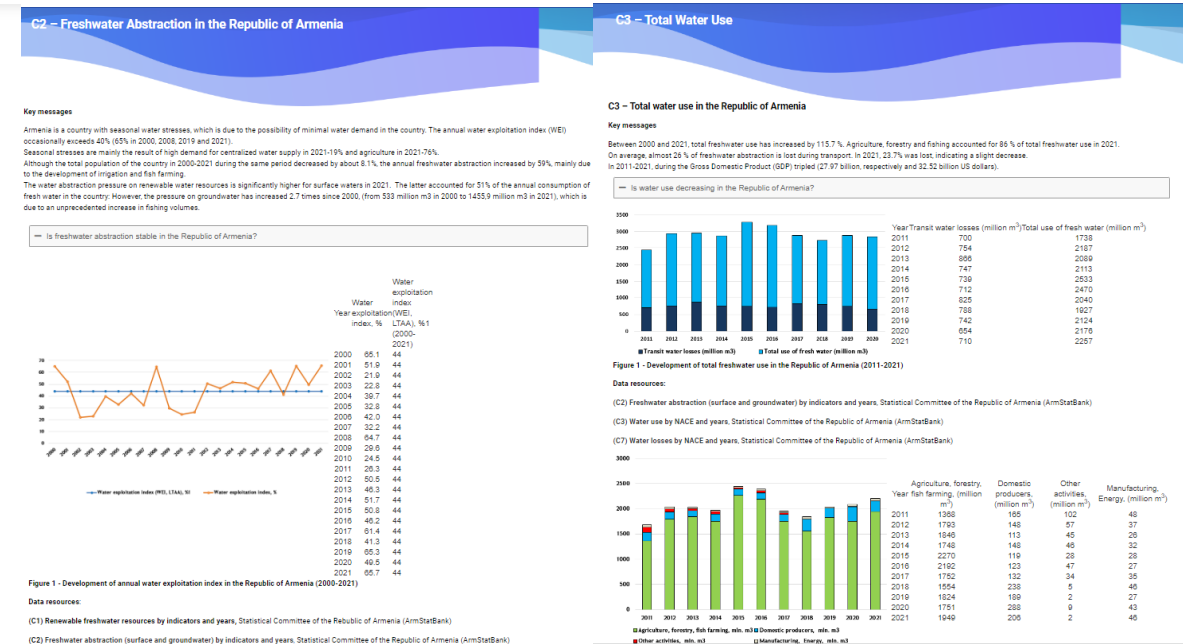
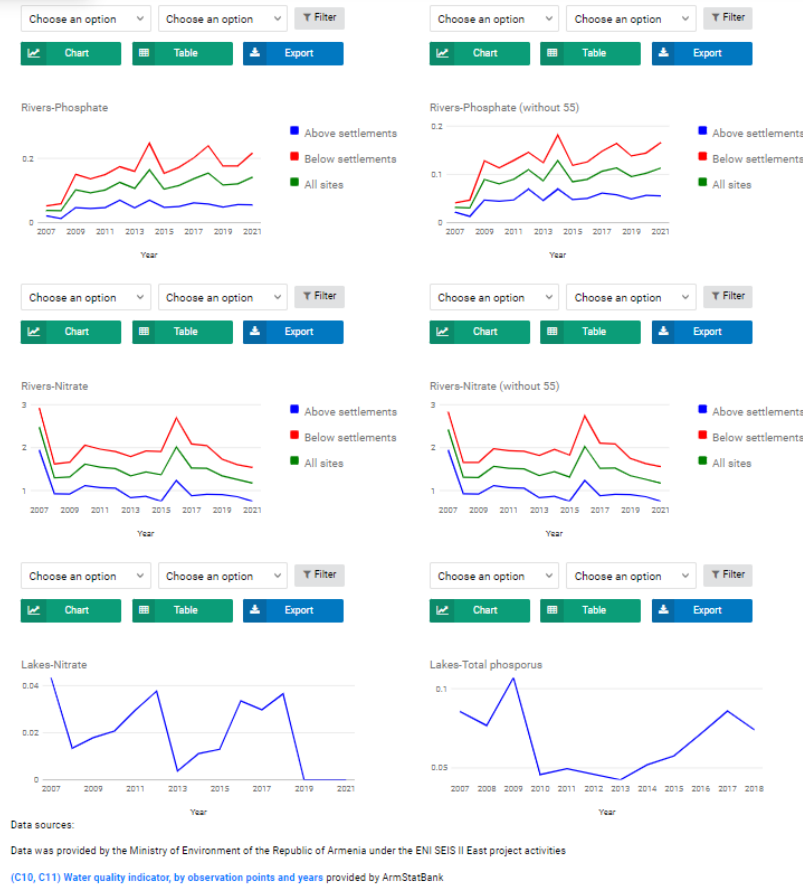


ENVIRONMENTAL INDICATORS- ECOPORTAL



C1 for 2000-2021
C2 for 2000-2021
C3 for 2011-2021
C4 for 2000-2021
C5 for 2000-2021
C10 for 2007-2021
C11 for 2007-2021
D1 for 2000-2017

www.ecoportal.am



An environmental indicator is a measure, generally quantitative, that can be used to illustrate and communicate complex environmental phenomena simply, including trends and progress over time – and thus helps provide insight into the state of the environment. Indicators are designed to answer key policy questions and support all phases of environmental policymaking, from designing policy frameworks to setting targets, and from policy monitoring and evaluation to communicating to policy-makers and the public.

The indicators available on this website have been developed jointly by the European Environment Agency (EEA), European Topic Centres on Inland, Coastal and Marine waters and national experts from Armenia under the ENI SEIS II East project funded by the European Union. The set of indicators is a selection from the [UNECE Environmental Indicators](#), while EEA indicator template and DPSIR assessment framework have been followed for the indicators' content.

C2 – Freshwater Abstraction in the Republic of Armenia

Armenia is a country with seasonal water stresses, which is due to the possibility of minimal water demand in the country. The annual water exploitation index (WEI) occasionally exceeds 40% (65% in 2000, 2008, 2019 and 2021).

[View](#)

C3 – Total water use in the Republic of Armenia

Between 2000 and 2021, total freshwater use has increased by 115.7 %. Agriculture, particularly irrigation and aquaculture, accounted for 86 % of total freshwater use in 2021.

[View](#)

DATA QUALITY ASSURANCE AND CONTROL DATA MANAGEMENT



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- Introduction of EU Single Integrated Metadata Structure (SIMS) to compile ESS reporting structures in Armstat:
 - *User-oriented Euro SDMX Metadata Structure (ESMS)*
 - *Producer-oriented the ESS Standard for Quality Reports Structure (ESQRS).*
 - *ESQRS files provide users with detailed information for assessing the quality of the data sets.*
 - *Documentation of 35 statistical products according to the SIMS (available in English and Armenian on Armstat website).*
- Quality assurance framework of the European Statistical System, version 2.0 (approved by the resolution No 23-a of the State Council on Statistics of RA dated 16 July 2020)

DATA POLICY & INSTITUTIONAL AND REGULATORY MECHANISMS & TECHNICAL SOLUTIONS FOR DATA EXCHANGE



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- To faster data exchange between national organizations the several memorandums has been signed between HMC, ME and other governmental organizations, academic institutions, and etc.
- [Decision of the Government of the Republic of Armenia N 183-I on approving Armenia's digitalization strategy, program of strategic events and performance indicators for 2021-2025 \(dated February 11, 2021\)](#)
- The electronic web platform of data collection, storage and processing of the ARMSTAT is on the stage of testing. Some reporting forms are already being tested. The aim is to integrate different modules in one information system and improve the capacity of statistical system of Armenia and technical capacity of the staff at the ARMSTAT to produce and disseminate relevant, reliable and timely statistics in a cost-effective manner that are in line with international standards and will be responsive to user needs.
- Development the infrastructure for GHG and air pollutant emission inventories under the Ministry of Environment within the project of UNDP-GEF “Building Armenia’s National Transparency Framework under Paris Agreement”

DATA POLICY & INSTITUTIONAL AND REGULATORY MECHANISMS & DATA EXCHANGE



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- The second EPR report has been drafted in 2022 and will be published in June 2023.
- [The Sector Review of Environment Statistics of the Statistical Committee of the Republic of Armenia \(ARMSTAT\)](#) was undertaken within the framework of the project “Global Assessments, Peer Reviews and Sector Reviews for the European Neighbourhood Policy (ENP) Countries” with the assistance of Statistical Office of the European Union (EUROSTAT).
- Air Emission Accounts was developed within the scope of “Building Armenia’s national transparency framework under Paris Agreement” UNDP-GEF project. In the scope of ADB “Development of New Statistical Resources and Building Capacity in New Data Sources and Technologies” project assistance in improvement of Air Emission Accounts and Water Accounts are planned.
- Under the EU4Environment “Water resources and environmental data” program activities are planned to prepare a Communication on Water Accounts in Armenia and develop an awareness raising approach, compile new indicators.
- National Strategic Plan, Framework for Weather, Water, Environment and Climate Services and Action Plan were drafted.

NATIONAL MONITORING NETWORKS AND SYSTEMS



- Upgrading meteorological stations
 - 6 automatic meteorological stations have been installed for forest fire forecasting, highway maintenance, monitoring of agricultural sector.
 - 11 meteorological stations will be equipped with automatic instruments during 2023.
- Enhancing the technical capacity for biodiversity monitoring
- Development of the comprehensive concept for improving the air quality monitoring
- Developed and implemented surface and ground water monitoring according to the EU WFD



NATIONAL MONITORING NETWORKS AND SYSTEMS



Laboratory of the Hydrometeorology and Monitoring Center SNCO

- Laboratory accreditation according to international ISO 17025 requirements
- Interlaboratory comparison

- Strengthening the technical capabilities of the laboratory for the purpose of water quality assessment in the Sevan Lake basin
- Development of technical capacity for mercury testing in support of RA's obligations under the Minamata Convention



15
EQUIPMENT

45 PARAMETERS

20-25
SPECIALISTS

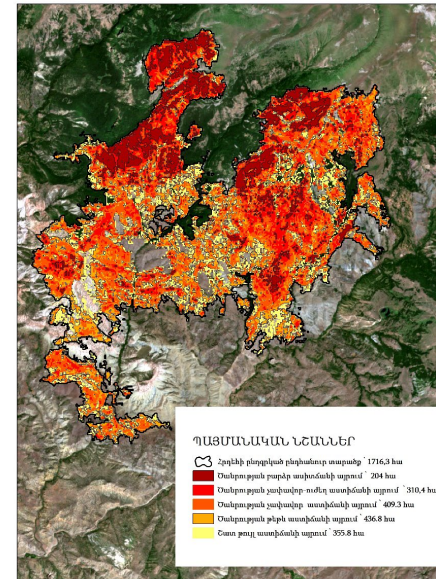
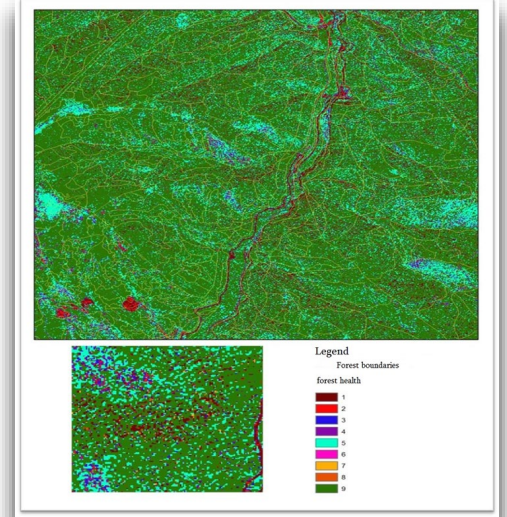
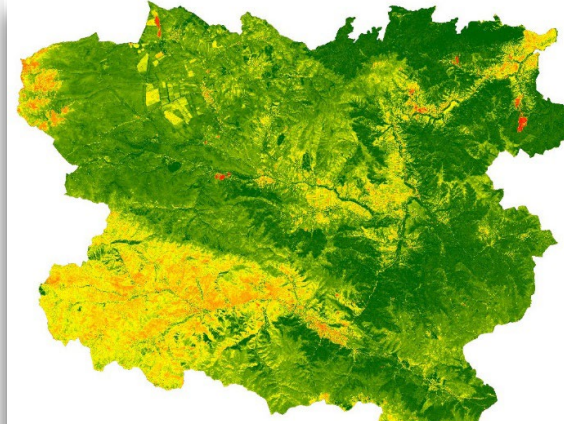


DIGITALIZATION & DIGITAL TRANSFORMATION RELATED TO ENVIRONMENTAL INFORMATION



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- Developing of the unified databases of Hydrometeorology and Monitoring Center SNCO, a new website and mobile application (in the development stage).
- Upgrading Water cadaster in the Ministry of Environment.
- Upgrading of the Ecoportal adding Lake Sevan sector
- **Earth observation use in monitoring of:**
 - Biodiversity
 - Forest (fire areas, vegetation cover, wooded areas, changes in foliage, Identification of foci infected with diseases and pests)
 - Water quality of Lake Sevan
 - Wastelands, tailings.



REMAINING CHALLENGES



- Lack of geospatial initiative. At the moment, there is no central geoportal available, hence there is a need to develop a central and standard platform for the dissemination of environmental information with spatial data.
- Collaboration for the development of digitalisation. There is a need to assess common functions in public institutions and to find solutions which are generic, applicable and interoperable between them. In that regards, there is a need for a cross-sectorial approach to digitalisation, which involves the participation from all Ministries.
- Lack of extended legal basis concerning the open data access. The Law on Freedom of Information (adopted in 2003) is the main legal source concerning open data in the country.
- Need for implementation and appropriate use of the top-down and bottom-up approach with clear division of roles and responsibilities among governmental institutions on national and local level.

REMAINING CHALLENGES



- Weak IT structure of territorial Government entities. Digitalisation of public administrations require trained staff, clear procedures, and technical standards to follow.
- To continue develop and upgrade the monitoring networks to have real-time and accurate data,
- To continue develop and use ecoportal for other indicators,
- Capacity building of the producing indicator based national state environment reports,
- To continue the use of CLC in the different sectors.
- To continue to establishment of SEIS in Armenia.

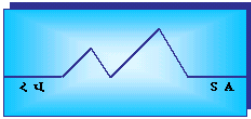
MAIN ISSUES TO BE ADDRESSED AND SUPPORTED



- Compile environmental-economic accounts
- Complete and improve biodiversity register
- Support to maintain forest register
- Support to develop administrative land register
- Improvement of management of complete shared environmental information system
- Participation in development and improvement sustainable systems of sustainable development and green economy
- Regularly study the needs of information users, prepare new publications, etc.

Thank you!





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