State of SEIS implementation in 2018 Country Factsheet THE REPUBLIC OF MOLDOVA

The Republic of Moldova has been making significant progress in establishing SEIS through the implementation of SEIS principles and three pillars: Content, Infrastructure and Cooperation. The Republic of Moldova participates actively in the work of the United Nations Economic Commission for Europe (UNECE) Working Group on Environmental Monitoring and Assessment (WGEMA) and the UNECE Joint Task Force (JTF) on Environmental Statistics and Indicators, which support countries in Europe and Central Asia in establishing SEIS by 2021. The present document provides an overview of the state of SEIS implementation in the Republic of Moldova and offers recommendations on how to achieve the SEIS 2021 target.

KEY MESSAGES

Content

- The Republic of Moldova has achieved some progress in making UNECE environmental indicators available and accessible
- 28 out of 49 (including 7 placeholders) UNECE environmental indicators are available in 2018
- The Republic of Moldova produced its first indicator-based SoER and National Report based on the OECD set of Green Growth Indicators
- Environmental indicators are used as forecasts for environmental policy targets
- A national list of SDGs has been elaborated

Infrastructure

• Environmental information and indicators are available on the Governmental Open Data Portal

Cooperation

- The Order of collaboration between the Ministry of Agriculture, Regional Development and Environment (MARDM), the State Hydrometeorological Service (SHS) and National Bureau of Statistics (NBS) is in place
- The Republic of Moldova actively participates in the UNECE indicator-related processes and SEIS projects supported by the European Union (EU) and the European Environment Agency (EEA)
- All agreements within the ENI-SEIS EAST II project¹ should be reconfirmed due to administrative reforms. A national SEIS assistant was nominated

THE SEVEN SEIS PRINCIPLES² AND STATE OF THEIR APPLICATION IN THE REPUBLIC OF MOLDOVA³

According to the SEIS principles, information should be:

Managed as close as possible to its source

Collected once, and shared with others for many purposes

Readily available to easily fulfill reporting obligations

Easily accessible to all users

Accessible to enable comparisons at the appropriate geographical scale and citizen participation Fully available to the general public at the national level in the relevant national language(s) Supported through common free open software standards

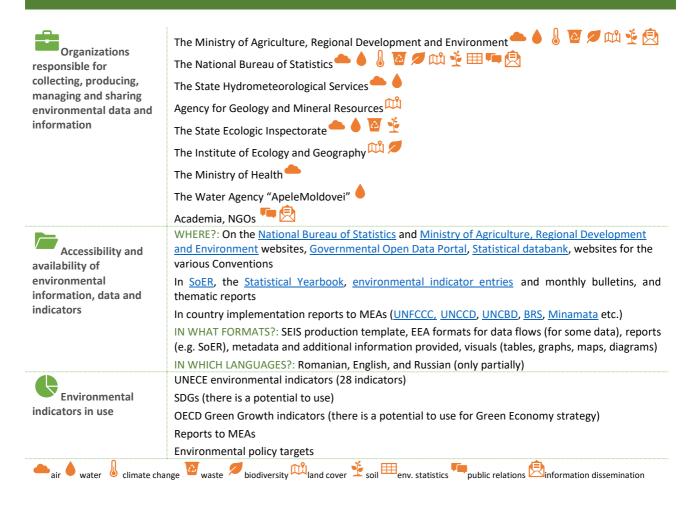


¹ The ENI-SEIS - Project "Implementation of the principles and practices of the Shared environmental information system (SEIS) in the Eastern Partnership countries"

² More information on SEIS principles is available at: https://www.eionet.europa.eu/seis/principles

³ The evaluation is based on experts' opinion, there are possible changes or clarifications after discussions with Moldova's counterparts.

MANAGEMENT OF ENVIRONMENTAL INFORMATION - OVERVIEW



CONTENT AND INFRASTRUCTURE

FROM INDICATOR PRODUCTION TO USE

STATE OF PRODUCTION AND SHARING OF ENVIRONMENTAL INDICATORS

Out of 48 UNECE environmental indicators, 23 were selected and assessed in a 2017-2018 UNECE study on the state of production, sharing and use of UNECE environmental indicators in the EU Eastern Partnership countries⁴. Other 26 indicators were assessed in less detail and following less rigorous criteria.

23 assessed UNECE environmental indicators of the Republic of Moldova (2018):

- 16 indicators showed organizations and contact persons responsible for indicator production;
- 16 indicators included the time of update;
- 8 indicators contained reference to their conformity with the standards (3 international, 5 domestic);
- 17 indicators included graphics and diagrams.

Indicators (number of data sets underpinning them)	А	R	Т	М	v
A. Air pollution and ozone depletion	<u> </u>	<u> </u>	<u> </u>		1
A1: Emissions of pollutants into the atmospheric air (14)	8	2	2	0	1
A2: Ambient air quality in urban areas (4)	2	2	1	1	1
A3: Consumption of ozone-depleting substances (7)	7	2	1	2	1
B. Climate change					
B1: Air temperature (1)	0	0	0	0	0
B2: Atmospheric precipitation (1)	0	0	0	0	0
B3: Greenhouse gas emissions (2)	2	2	1	2	1
C. Water					
C1: Renewable freshwater resources (1)	1	2	1	0	0

⁴ The EU-funded project supports production and regular update of the regional set of indicators and strengthening environmental statistics and accounting in the six Eastern Partnership countries under the ENI SEIS East II project.

C2: Freshwater abstraction (3)	2	2	2	0	1
C3: Total water use (4)	3	2	2	0	1
C5: Water supply industry and population connected (1)	0	0	0	0	0
C10: BOD and concentration of ammonium in rivers (2)	2	2	1	1	1
C11: Nutrients in freshwater (5)	5	2	1	2	1
C14: Population connected to wastewater treatment (1)	0	0	0	0	0
C15: Wastewater treatment facilities (1)	0	0	0	0	0
C16: Polluted (non-treated) wastewater (2)	2	2	2	0	1
D. Biodiversity					
D1: Protected areas (1)	1	2	1	1	1
D3: Forests and other wooded land (1)	1	2	2	0	1
D4: Threatened and protected species (2)	2	2	2	0	0
E. Land and soil					
E1: Land uptake (2)	2	2	2	0	1
G. Energy					
G1: Final energy consumption (2)**	2	0	0	1	0
G2: Total primary energy supply (2)**	2	0	0	1	0
I. Waste					
I1: Waste generation (2)*	2	2	2	0	1
I2: Management of hazardous waste (6)	3	2	2	0	1

^{*} Data sets are found in digests and reports published on the respective national websites.

33 to 67%

Rating criteria:

less than 33%

A - Accessibility of data sets⁵: the number of accessible data sets. The indicator "Emissions of pollutants into the atmospheric air" is an exception. This indicator includes the appraisal of emissions of sulphur dioxide (SO₂), nitrogen oxides (NO_x), nonmethane volatile organic compounds (NMVOCs), ammonia (NH₃), carbon monoxide (CO), particulate matter PM₁₀ and PM_{2.5} from both stationary and mobile sources. If this requirement is met, the rating is 1, if the emissions from only one source type are demonstrated - 0.5. Emissions of any other substances are subdivided into emissions from neither stationary nor mobile sources (according to the indicator description), so that the score for each accessible data set is 1.

over 67% of the maximum possible number

R - Indication of the responsible authority for indicator production⁶: 2 – the responsible organization and the responsible official are indicated; 1 – only the responsible organisation is indicated; 0 – none is indicated.

T - Time of $update^7$: 2 – in or after 2016 and within 1 year from the date of the latest data point in the series; 1 – the same but before 2016; 0 – the time of update is not indicated.

M - Conformity with methodological standards⁸: 2 – conform with international standards; 1 – conform with national standards; 0 – conformity with standards not specified.

V - Availability of graphs, diagrams, maps⁹: 1 - available, 0 - not available.

QUALITY OF SEVEN DATA FLOWS BASED ON MOLDOVA'S SELF-ASSESSMENT (2018)

The Republic of Moldova has conducted a self-assessment of 7 data flows underpinning 3 UNECE indicators selected for the SEIS mid-term review. The mid-term review was based on a SEIS Assessment Framework and a questionnaire with 25 questions on quality, aligned with quality criteria used by the UNECE Statistical Division and EEA, and corresponding to three SEIS pillars:

^{**}The data sets obtained from external sources (such as, e.g. national reports for international organizations).

⁵ Relates to the Accessibility criterion of the revised SEIS Assessment Framework

⁶ Relates to the Clarity criterion of the revised SEIS Assessment Framework

 $^{^{7}}$ Relates to the Timeliness and the Punctuality criteria of the revised SEIS Assessment Framework

⁸ Relates to the Clarity and the Comparability criteria of the revised SEIS Assessment Framework

⁹ Relates to the Clarity criterion of the revised SEIS Assessment Framework

SEIS establishment template, reports/SoER, additional data and metadata provided, visuals. Data is available at: http://statbank.statistica.md/pxweb/pxweb/pxweb/ro/10%20Mediul%20inconjurator/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774
http://www.statistica.md/pageview.php?l=ro&idc=350&id=3242, http://www.statistica.md/pageview.php?l=ro&idc=350&id=4290, http://www.meteo.md/index.php/calitatea-mediului/burita-privind/

http://www.meteo.md/index.php/calitatea-mediului/harile-anuale-privind-nivelul-de-poluare-a-aerului-atmosferic-in-mun.-chisinau/

^aTheme: A. Air pollution and ozone depletion / Indicator: A2. Ambient air quality in urban areas / Data flow: Annual average concentration of sulphur dioxide

Atmospheric air: The concentrations of SO_2 and NO_2 were measured in 3 cities (in Chisinau at 7 monitoring locations, in Balti at 3 locations, in Tiraspol at 4 locations) on a regular basis between 2000–2014. The daily average concentration of PM_{10} was measured during 2012–2014 at one location in Chisinau. All the information on the website is available in Romanian and English. Graphs show the variation in SO_2 and NO_2 concentrations over time. Areas to improve: The website refers to the SHS and responsible individual for the production of the data. However, the indicated date of last update of content (02.06.2016) has not been updated, since the date recorded runs past such date. Data on ground-level ozone is unavailable. The analysis of pollutant concentration was carried out in accordance with techniques developed in the USSR in 1991. The conformity of such techniques with international standards is not indicated.

Water: Data shows the annual averages, maximum and minimum concentrations of BOD_5 , and the concentration of NH_4 in three rivers: samples were taken in the Dniester and the Prut at three locations each, and in the Danube at one location. BOD_5 data is available for the periods of 1990, 1995 and 2000–2014. NH_4 data is available for the periods of 1990, 1995, 2000–2003 and 2005–2014. Trends and patterns are described in narrative format, including mention of the actions required to improve water quality in the country. All information on the website is published in Romanian and English. The website refers to the SHS and the person responsible for data production. The number of taken samples is shown for each year. The location of sampling is shown in relation to its distance from a nearby settlement. Graphs and diagrams visually represent some trends in BOD_5 and concentrations of NH_4 .

<u>Areas to improve:</u> The date of last update of the content (02.06.2016) is clearly outdated. There is no information about sampling periods. There is reference to the iodometric method of BOD_5 measurement, but no information relating to conformity with international standards. The method of measurement for NH_4 is not mentioned.

Biodiversity: The datasets include data on the total territory of protected areas, their share in the total country territory, as well as information on areas belonging to different national categories (national parks, nature reserves, nature monument, landscape territories and others – in total 12 categories) in 2000–2014. All information on the website is published in Romanian and English. The website refers to the MARDM and the person responsible for data production, and indicates the date of last update – 12.08.2015. Graphs and diagrams characterize the increase over time in the share of territory designated as protected areas. <u>Areas to improve:</u> National categories of protected areas are not aligned with IUCN categories.

Summary of self-assessment

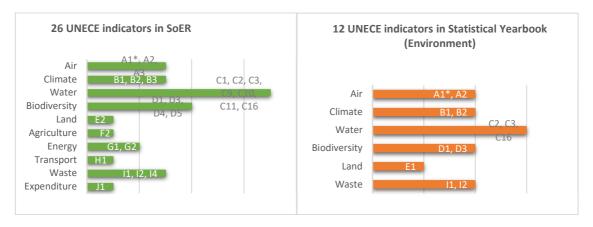
Concerning 7 self-ranked data flows underpinning 3 environmental indicators, the Republic of Moldova has reported on a long-time series of continuous data since 1990. Moldova declared ISO 17025 as the procedure used for quality assurance. Data-providing organisations are systematically indicated, as well as the responsible persons and their contact details. Published data is well illustrated. Indicators in the Republic of Moldova also include information about necessary measures to take in order to improve the environmental situation. Moldova reported the use of SEIS templates. It uses the indicators for multiple purposes. Moldova interacts actively with users, analysing feedback collected through an online questionnaire regularly.

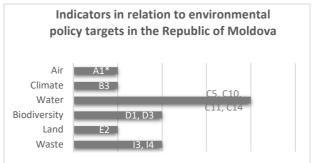
The Republic of Moldova ranked its performances as **77.86%** - good performance.

USE OF ENVIRONMENTAL INDICATORS

Use of environmental indicators in environmental assessments, state of the environment reports and other thematic environmental reports or statistical bulletins

The Republic of Moldova produced its first <u>indicator-based environmental report</u> in 2015, covering 6 environmental indicators. UNECE environmental indicators are progressively used in visual materials (time-series graphics, tables, maps) in some national documents, such as the 2011 SoER¹⁰ (it covers 26 environmental indicators), the 2017 National Statistical Yearbook¹¹, the 2017 National Resources and the Environment¹² statistical publication and other thematic reports. Additionally, in the Republic of Moldova environmental indicators are linked to the environmental policy targets (defined as forecasts in the Environmental Strategy for the years 2014-2023¹³) and have the potential to become a policy monitoring tool.





^{*}Abbreviations as used in the Guidelines for the Application of Environmental Indicators are accessible at https://www.unece.org/env/indicators.htm

Use of environmental indicators for reporting on international obligations under MEAs

One of the SEIS principles stipulates that environmental information and indicators could be used for various reporting purposes under the MEAs. UNECE environmental indicators are used in different formats and to certain extents in country implementation reports to the UNFCCC¹⁴, UNCBD¹⁵, UNCCD¹⁶ (as textual material), and the Protocol on Water and Health under the Water Convention¹⁷. UNECE indicators are also, to a smaller extent, used for reporting on three BRS Conventions¹⁸ and the Minamata Convention.¹⁹

¹⁰State-of-the-environment report (2011, <u>in Romanian</u>). For an overview of overall user perspectives on SoER, its role and impact on the country's environmental policy, see the 2017 report "Effectiveness and relevance of recent environmental assessments for policy-making and public information in the Republic of Moldova" (<u>in English</u> and <u>in Romanian</u>).

¹¹2017 National Statistical Yearbook provides data that correspond to UNECE environmental indicators. Statistical data could be found in Territorial statistics. All environmental indicators are available at Statistical databank.

¹²National Resources and the Environmental in the Republic of Moldova (2017, in Romanian).

¹³The Republic of Moldova. Environmental strategy for the years 2014-2023.

¹⁴Third National Communication of the Republic of Moldova under the United Nations Framework Convention on Climate Change. (2015, in English).

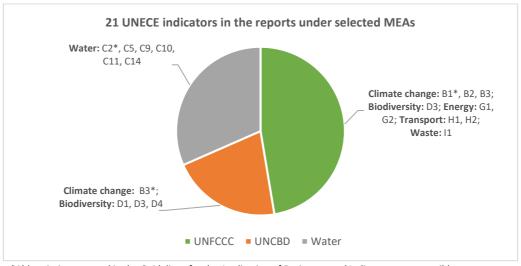
¹⁵Fifth National Report of the Republic of Moldova to the Convention on Biological Diversity (2013, in English).

¹⁶<u>Third National Report on implementation of the United Nations Convention to Combat Desertification in the Republic of Moldova</u> (2006, in English). Indicators are mainly linked to Aichi biodiversity targets.

¹⁷The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention).

¹⁸The Republic of Moldova submitted an <u>Electronic Reporting System of the Basel convention</u> (2016), two on-line reporting circles in <u>2007</u> and <u>2010</u> under the Stockholm conventions.

¹⁹ International <u>projects</u> under the Minamata convention in the Republic of Moldova.



^{*}Abbreviations as used in the Guidelines for the Application of Environmental Indicators are accessible at https://www.unece.org/env/indicators.htm

Use of environmental indicators for reporting on the Sustainable Development Goals (SDGs) and Green Growth In 2017, following the consultations on adjusting the indicators for the 2030 Agenda for Sustainable Development in the context of the Republic of Moldova, the <u>indicators for the SDGs</u> were nationalized. The Republic of Moldova produced a <u>National Report</u> based on the OECD set of Green Growth Indicators.

The potential use of UNECE indicators for SDGs monitoring in the Republic of Moldova

6 CLEAN WATER
AND SANDERON

7 RESENANCE
ENCRY

Water:C10*, C11, C16 (fully); C2, C3, C7 (partially); C4, C5, C9 (limited) **Air**: A1 (partially)



Energy: G2 (fully); G3, G4 (limited)



Air: A1, A2 (partially); Land: E1 (partially); E2 (limited); Waste: I3, I4 (limited)



Air: A3 (fully); Water: C2, C3 (partially); Biodiversity: D3 (fully); Agriculture: F2, F4 (limited); Waste: I1 (fully); I2 (partially); I3, I4 (limited)



Climate change: B1, B2 (limited), B3 (fully)



Water: C16 (fully)



Biodiversity: D1, D3, D4 (fully); D5 (limited); Land: E2 (limited)

Linking of 15 UNECE indicators to OECD Green Growth indicators in the Republic of Moldova

1. CO₂ productivity (1.1)**

2. Energy productivity (2.1, 2.2, 2.3)

3. Material productivity (non-energy) (3.3, 3.4)

4. Water productivity

7. Freshwater resources

8. Forest resources

11. Land resources:

13. Wildlife resources

14. Environmentally induced health problems

Climate change: B3* Energy: G1, G2, G4

Agriculture: F2 Waste: I1

Water: C3, C7 Water: C1, C2 Biodiversity: D3 Land: E1

Agriculture: F2
Biodiversity: D4

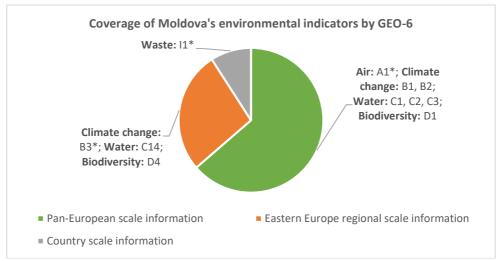
Air: A2

^{*}Abbreviations as used in the Guidelines for the Application of Environmental Indicators are accessible at https://www.unece.org/env/indicators.htm

^{**} Abbreviation as used in the list of OECD Green Growth indicators.

Use of indicators in the Pan-European volume of GEO-6²⁰

The 6th Global Environmental Outlook (GEO-6), produced in 2016 by UNEP and UNECE, covers Moldova's use of environmental indicators in the regional context.



^{*}Abbreviations as used in the Guidelines for the Application of Environmental Indicators are accessible at https://www.unece.org/env/indicators.htm

COOPERATION

NATIONAL AND INTERNATIONAL SUPPORT FOR THE DEVELOPMENT OF SEIS

The Republic of Moldova shows good internal cooperation and interaction between environmental information holders. An order of collaboration between the MARDM, the SHS and NBS is in place.

The ENPI-SEIS project (2010-2015)²¹, implemented by the EEA and funded by the EU, was aimed at furthering the engagement of the countries of the European Neighborhood (including the Republic of Moldova) in regional cooperation. Such project was supposed to improve national capacities for managing and sharing environmental data and information. The ENPI-SEIS project addressed the three **SEIS pillars** through enhanced networking with the national capacities on environmental information.

Building on the achievements of the aforementioned project, a four-year EU-funded ENI SEIS II EAST project (2016-2020) now aims to support the promotion of environmental protection by strengthening environmental governance. As of 2018, project implementation in Moldova is underway: due to the governmental reform and creation of the new MARDM, a signed Letter of Intent on political commitments to environmental information, the National Implementation Team appointed and the National Focal Points need to be reconfirmed. A national SEIS assistant has been designated.

²⁰United Nations Environment Programme. Global Environment Outlook GEO-6. Assessment for the pan-European region. 2016.

²¹The main achievements and outcomes can be found in the East Region Synthesis report 'Building SEIS with the Eastern Neighborhood'.

The Republic of Moldova has been making significant progress in improving accessibility of UNECE environmental indicators, which are increasingly being published on the websites of national environmental authorities, statistical agencies and open data portals in compliance with UNECE requirements. National categories of protected areas do not comply with IUCN categories. Due to administrative reforms, not all environmental data is transferred to the new Ministry website.

The Republic of Moldova has potential to achieve the 2021 target on UNECE indicators' availability as well as on SEIS implementation.

The Republic of Moldova has elaborated a national list of SDGs, and it has produced a National Report based on the OECD set of Green Growth Indicators. There is potential to use UNECE environment indicators to monitor the progress under the SDGs.

The Republic of Moldova has produced its first indicator-based report. SoER, Statistical Yearbook (environment) and thematic reports provide sufficient environmental information and data. The reports should be complemented with analysis, assessments and concrete recommendations; they should include relevant material and case studies and be well illustrated.

The produced reports are not always available on the website of the Ministry/nationally managed websites. Some reports to the MEAs are available on the relevant Conventions websites. Awareness of the assessment is not high.

Reporting under the MEAs remains one of the main tasks of the country. The use of environmental indicators for different purposes, including reporting under the MEAs should be promoted and strengthened.

- Further advance the production and sharing of environmental indicators in compliance with UNECE WGEMA and the JTF on Environmental Statistics and Indicators recommendations;
- Continue methodological work on existing and new environmental indicators so that all UNECE environmental indicators are produced, available and accessible by 2021;
- ✓ Use IUCN categories to collect data on protected areas;
- Maintain cooperation and interaction among environmental information producers in the country to achieve SEIS implementation.
- Assess in detail and/or promote the use of UNECE environmental indicators to monitor SDGs progress;
- Increase the use of indicators for different purposes and monitoring capacities of the progress on achievement of the SDGs and Green Economy.
- Based on its first experience, continue the practice of producing indicator-based SoER;
- Improve the analytical and recommendation parts of the SoER/thematic reports by using indicators (shift from providing environmental information to environmental assessment, visual explanations).
- Make sure all produced reports are available on nationally managed websites and in both national language and English, and that they are well presented to reach a broader public.
- ✓Increase the use of the environmental indicators for preparation of the reports under MFAs:
- Improve the quality of the reports under the MEAs (analytical and visual parts).

Abbreviations and Acronyms:

BRS – Basel, Rotterdam and Stockholm Conventions (on waste, chemicals and POPs): Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade; Stockholm Convention on Persistent Organic Pollutants

EEA – European Environment Agency

ENI - European Neighborhood Instrument

ENI-SEIS II EAST project – Project "Implementation of the principles and practices of the shared environmental information system (SEIS) in the Eastern Partnership countries"

ENPI-SEIS project - Projects "Towards a Shared Environmental Information System in the European Neighborhood"

EU – European Union

IUCN – International Union for Conservation of Nature

MEA - Multilateral environmental agreement

Minamata - Minamata Convention on Mercury

MARDM- Ministry of Agriculture, Regional Development, Environmental

NBS- National Bureau Statistics

NFP - National Focal Point

NIT – National Implementation Team

OECD - Organization for Economic Cooperation and Development

SHS – State Hydrometeorological Service

SoER – State-of-environment report

SEIS – Shared Environmental Information System

UNFCCC – United Nations Framework Convention on Climate Change

UNCCD - United Nations Convention to Combat Desertification

UNCBD - United Nations Convention on Biological Diversity

About the activity:

Countries of Eastern Europe, the Caucasus and Central Asia have long traditions in the fields of environmental information, assessment and reporting. At the Seventh Environment for Europe Ministerial Conference (Astana, 2011) the participating ministers decided to establish a regular process of environmental assessment and to develop SEIS across the region to keep the Pan-European environment under review. The UNECE Working Group on Environmental Monitoring and Assessment and the Joint Task Force on Environmental Statistics and Indicators created a platform for the countries to gradually consolidate a shared vision on how to select, calculate, present and use environmental indicators to communicate the state of the environment, factors and trends. The European Environment Agency is supporting the development of the SEIS in the EU Neighbourhood region.

This activity, funded by the Russian Federation, aims to support the actions under the Environmental Monitoring and Assessment (EMA) Programme. It also aims to strengthen national capacities in Central Asia, the Caucasus and Eastern Europe in environmental monitoring and assessment, and at enhancing the understanding by ECE member States of environmental data sharing and SEIS establishment.

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Sources:

Reporting on Progress in Establishing SEIS in the Pan-European Region for the mid-term review and for piloting the SEIS Assessment Framework (the Republic of Moldova's self-assessment), February 2018; The current status of production, sharing and use of UNECE environmental indicators in the EU Eastern Partnership countries, June 2018; Effectiveness and relevance of recent environmental assessments for policy making and public information in the Republic of Moldova, October 2017; Ministry of Agriculture, Regional Development, Environmental of the Republic of Moldova and National Bureau Statistics of the Republic of Moldova.

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