

# **Sharing and dissemination of environmental information**

## **Country maturity report: Georgia**

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**Prepared by PricewaterhouseCoopers under contract with the European Environment Agency**



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This report was produced by PricewaterhouseCoopers as part of the project for developing a roadmap and identify feasible and practical means for integrating environmental information in national e-governance/open data processes and platforms. This action is done in the context of the ENI SEIS II East project 2016-2020. The report was built in 2018 and updated throughout 2019, including a review in March 2019 after the first regional meeting in Kiev, and the second review after the roundtable in November 2019. The report was reviewed by public authorities in Georgia in December 2019.

This report contains information obtained or derived from a variety of publicly available sources described within the report in more detail and does not intend to be a comprehensive analysis of environmental information, open data and e-government in the country but a collection of the main elements shaping the national environmental information landscape.



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## List of abbreviations

| Abbreviation | Description   |
|--------------|---|
| API          | Application Programming Interface                               |
| DEA          | Data Exchange Agency  |
| EaP          | Eastern Partnership   |
| EEA          | European Environment Agency                                     |
| EIEC         | Environmental Information and Education Centre                  |
| EGDI         | E-Government Development Index                                  |
| ENI          | European Neighbourhood Instrument                               |
| ENP          | European Neighbourhood Policy                                   |
| EPI          | Environmental Performance Index                                 |
| EU           | European Union  |
| GIS          | Geographic Information System                                   |
| GEOSTAT      | National Statistics Office of Georgia                           |
| HCI          | Human Capital Index   |
| ICT          | Information and Communication Technology                        |
| IDFI         | Institute for Development of Freedom of Information             |
| ITU          | Telecommunication Development Sector                            |
| MEA          | Multilateral environmental agreements                           |
| MEPA         | Ministry of Environmental Protection and Agriculture of Georgia |
| MOF          | Ministry of Finance and the Customs Service                     |
| NEA          | National Environment Agency                                     |
| NGO          | Non-governmental organisation                                   |
| NSDI         | National Spatial Data Infrastructure                            |
| NSO          | National Statistical Office                                     |
| ODIN         | Open Data Inventory   |
| OGP          | Open Government Partnership                                     |
| OSGF         | Open Society Georgia Foundation                                 |
| OSI          | Online Service Index  |
| PAR          | Public Administration Reform                                    |
| PRTR         | Pollutant Release and Transfer Registers                        |
| REC Caucasus | Regional Environmental Centre for the Caucasus                  |
| SDG          | UN Sustainable Development Goals                                |
| SEIS         | Shared Environmental Information System                         |
| TII          | Telecommunication Infrastructure Index                          |
| UNECE        | United Nations Economic Commission for Europe                   |
| UNFCCC       | United Nations Framework Convention on Climate Change           |



# 1 Methodological approach and policy context

The methodology followed to prepare this report is based on the 2018 and 2019 European Union reports on open data maturity in Europe, with some adjustments made to accommodate the specific situation of Eastern Partnership countries as well as the focus on environmental information.

This report was produced by PricewaterhouseCoopers as part of the European Environment Agency (EEA) service contract No. 3437/R0-ENIE/EEA.57335 for developing a roadmap and identify feasible and practical means for integrating environmental information in national e-governance/open data processes and platforms. This action is done in the context of the EU-funded ENI SEIS II East project 2016-2020, which targets Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova and Ukraine – namely Eastern Partnership countries (EaP).

In all countries of the Eastern Partnership, e-governance and open data initiatives are recognised as mainstream for making data and information easily accessible to the policymakers, public and other stakeholders. Sharing environmental information through national e-governance and open data frameworks based on the Shared Environmental Information System (SEIS) principles<sup>1</sup> has seen an important development in recent years. Nonetheless, it could be further underpinned with clearly developed visions and comprehensive roadmaps for this specific area. The benefits of sharing, disseminating and promoting reuse of environmental information can support the governmental policies and actions in environment and related areas, the transition towards a green economy, innovations, compliance with various reporting obligations as well as the implementation of various sustainable development goals (SDGs). Furthermore, it can streamline efforts and reduce the reporting burden for the national bodies by working together in a more structured and connected way. The present project aims to facilitate such exchanges and helping the EaP countries advance in developing an open data policy for the environment. The project takes places in the context of several international commitments and strategic documents related to the collection, update, sharing, dissemination and use of environmental information as follows:

- Article 5 of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) and decision VI/1 of the Meeting of the Parties to the Aarhus Convention on promoting effective access to information<sup>2</sup>;
- The Protocol on Pollutant Release and Transfer Registers (Protocol on PRTRs)<sup>3</sup>;
- The Batumi Declaration “Greener, cleaner, smarter!”<sup>4</sup> adopted by Ministers of the UNECE region calling to have SEIS in place in support to regular assessment in countries of UNECE region by 2021;
- The Declaration on Cooperation on Environment and Climate Change in Eastern Partnership<sup>5</sup> (Luxembourg 2016);

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<sup>1</sup> <https://www.eea.europa.eu/about-us/what/shared-environmental-information-system-1/shared-environmental-information-system>

<sup>2</sup> <https://www.unece.org/env/pp/treatytext.html>

<sup>3</sup> <https://www.unece.org/env/pp/prtr/docs/prtrtext.html>

<sup>4</sup> <https://www.unece.org/fileadmin/DAM/env/documents/2016/ece/ece.batumi.conf.2016.2.add.1.e.pdf>



- The 2030 Agenda for Sustainable Development<sup>6</sup>;
- The European Green Deal (2019)<sup>7</sup>;
- ‘Eastern Partnership policy beyond 2020’ Communication<sup>8</sup> adopted on 18 March 2020;

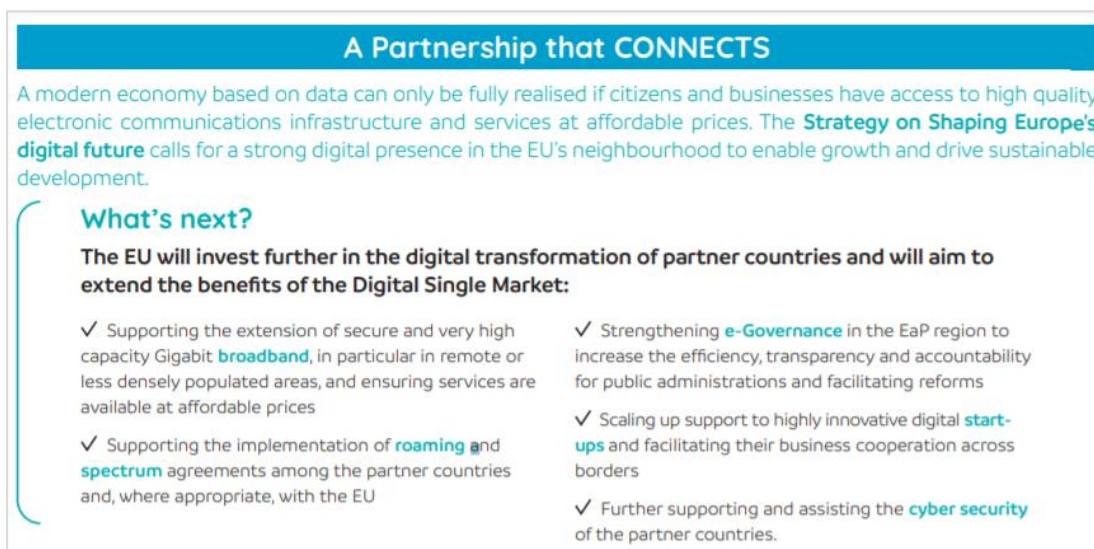


Figure 1. One of the five objectives of Eastern Partnership policy initiative (2020, Factsheet: The Eastern Partnership beyond 2020: Reinforcing Resilience – a partnership that delivers for all<sup>9</sup>)

- UN Secretary-General's Roadmap for Digital Cooperation<sup>10</sup>;
- Eastern Partnership leaders' video conference, 18 June 2020<sup>11</sup>.

SEIS is also an integral part of the Good Environmental Governance flagship initiative of the EU. EEA is currently supporting this process in both the European Neighbourhood countries<sup>12</sup> East<sup>13</sup> and South<sup>14</sup> in the context of dedicated projects currently running until mid-2020.

As part of this project, the “Country maturity report on sharing and dissemination of environmental information” has been prepared. The report reflects on the national e-government and maturity level of open data. The report identifies synergies for fostering environmental information sharing and dissemination to support the implementation, among others, of the SEIS principles, of the UNECE Aarhus Convention and Protocol on PRTRs. As such, the project aiming to 1) gradually expand the open data maturity approach to European Neighbourhood Instrument (ENI) countries and the specific topic of environment, 2) assess the ENI status of development in e-governance and open data for the environment, and 3) develop

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[https://ec.europa.eu/environment/international\\_issues/pdf/declaration\\_on\\_cooperation\\_eastern\\_partnership.pdf](https://ec.europa.eu/environment/international_issues/pdf/declaration_on_cooperation_eastern_partnership.pdf)

<sup>6</sup> <https://sustainabledevelopment.un.org/post2015/transformingourworld>

<sup>7</sup> [https://ec.europa.eu/info/sites/info/files/european-green-deal-communication\\_en.pdf](https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf)

<sup>8</sup> <https://data.consilium.europa.eu/doc/document/ST-6930-2020-ADD-1-REV-1/en/pdf>

<sup>9</sup> [https://eeas.europa.eu/sites/eeas/files/eap\\_joint\\_communication\\_factsheet\\_18.03.en\\_.pdf](https://eeas.europa.eu/sites/eeas/files/eap_joint_communication_factsheet_18.03.en_.pdf)

<sup>10</sup> <https://www.un.org/en/content/digital-cooperation-roadmap/>

<sup>11</sup> <https://www.consilium.europa.eu/en/meetings/international-summit/2020/06/18/>

<sup>12</sup> <https://euneighbours.eu/en>

<sup>13</sup> EU Neighbours East: Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova, and Ukraine

<sup>14</sup> EU Neighbours South: Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, and Tunisia



with the ENI countries a roadmap for fostering the process and gradually align it to similar developments taking place in European Union and other more advanced countries.

The report highlights the main challenges in the country in this area. The report serves as a tool to initiate the discussion about the strategic development and potential initiatives at the national level, bringing stakeholders from e-government, open data, and the environment together. It can serve both as a tool for further implementation and as a possible replicable prototype for other countries.

The SEIS approach consists of three pillars: Content, Infrastructure and Cooperation<sup>15</sup>, and this approach was followed for structuring the report and for gathering the necessary information. The report also leverages the work done in the European Union for measuring the maturity level of open data in the Member States. Consequently, the report adopts a similar structure as the “Open Data Maturity in Europe 2019”<sup>16</sup> published on the European Open Data Portal but adapted to EaP countries and also focusing on the connection between e-government, open data and environmental information. As such, the report is built around three major blocks, namely 1) the assessment of environmental information readiness; 2) the assessment of technological enablers; and 3) the key challenges and their translation into a proposed roadmap. The structure of the report is similar for all EaP countries. This approach makes the analysis comparable across EaP countries and serves as a baseline for developing and exchanging initiatives across the region.

In this regard, all country reports are complemented by the Good Practices Report which supports the implementation of the proposed roadmaps offering possible solutions and alternatives based on the example of other countries and international organisations.

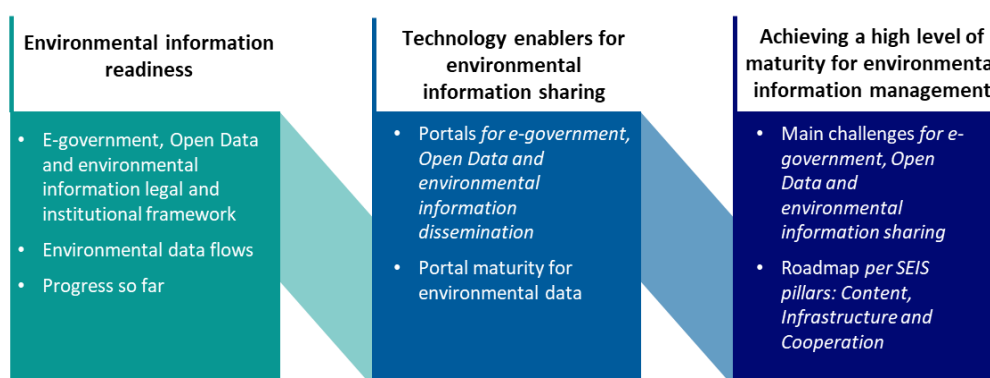


Figure 2. The country maturity report structure

The report was prepared in close cooperation with EEA project team, the National Focal Points (NFPs) for the ENI SEIS project, the UNECE Aarhus Convention and the Protocol on PRTRs Secretariat and NFPs respectively, and, the ENI SEIS national assistants. Furthermore, a broad consultation with local experts across a wide range of topics was ensured, ranging from environment, statistics, sectoral policies up to e-government and IT infrastructure.

<sup>15</sup> <https://eni-seis.eionet.europa.eu/east/governance/what-is-seis>

<sup>16</sup> The report structure was prepared according to Open Data Maturity in Europe 2018 and updated according to Open Data Maturity in Europe 2019 <https://www.europeandataportal.eu/en/dashboard#2019>







Figure 3. Pictures from the national roundtable in Tbilisi

The following sources of information were analysed for preparing the report, namely:

- Legislation:
  - Legal acts related to public information;
  - Legal acts related to open data;
  - Legal acts related to e-government;
  - Legal acts related to environmental information.
- Environmental reporting:
  - Aarhus Convention national implementation reports;
  - Protocol on PRTRs national implementation reports – where available;
  - UNECE Environmental Performance Review – where available;
  - EU Analytical Report 7: Open Data in the European Union Neighbourhood;
  - UNECE Progress in the production and sharing of core environmental indicators;
  - Interim Report on the Implementation of the Action Plan for Introduction of Open Government Partnership Initiative;
  - EEA – Georgia country report under ENPI-SEIS;
  - Country Factsheets on the state of SEIS implementation in 2018<sup>17</sup>;
  - World Bank Country Environmental Analysis, where available;
  - Country presentations made during the 4th ENI SEIS II East Project Steering Committee Meeting, 12 November 2019, Copenhagen;
  - Other country-specific reports.
- Portals:
  - EU Open Data Portal and national open data portals;
  - E-government services portals;
  - Environmental portals;
  - Statistical Office websites.
- Other sources:
  - Country-specific reports or/and analysis prepared by national and international bodies.

The challenges identified in each country, the related good practices, and the initiatives stemming from the roadmap were discussed initially during the regional event in Kiev on 4-

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<sup>17</sup> <http://www.unece.org/environmental-policy/environmental-monitoring-and-assessment/areas-of-work/shared-environmental-information-system.html>



6 March 2019. Furthermore, the country maturity report was updated based on the discussions and presentations made at the national event in Tbilisi and was further discussed in the national roundtable, with a focus on the roadmap (way forward). The roundtable gathered over 30 stakeholders from various sectors, including e-government, open data and environmental information providers and users (including NFPs from the ENI SEIS project and the Aarhus Convention, few representatives from non-governmental organisations and Aarhus Centre). Comments, presentations and conclusions from the national discussions were integrated into the report.

The conclusions and recommendations from the roadmap were finally presented at the second regional UNECE-EEA workshop “Open Data for the Environment” that took place in Geneva, on 2 October 2019 back-to-back with the Aarhus Convention Task Force on Access to Information. Furthermore, the final draft version of the report was shared with the ENI countries, and the last consultation was organised in December 2019 before releasing the final version of the report.

All materials, including the summary of the discussions taking place in the events organised in the context of the project, are available at the links below:

- [1st Regional workshop on Open Data and e-Government for the Environment \(Kiev, 4-6 March 2019\)](#)
- [National roundtable on open data and e-government for the environment in Armenia](#)
- [National roundtable on open data and e-government for the environment in Azerbaijan](#)
- [National roundtable on open data and e-government for the environment in Belarus](#)
- [National roundtable on open data and e-government for the environment in Georgia](#)
- [National roundtable on open data and e-government for the environment in the Republic of Moldova](#)
- [National roundtable on open data and e-government for the environment in Ukraine](#)
- [Joint UNECE-EEA Workshop on Open Data for the Environment \(Geneva, 2 October 2019\)](#)



## 2 Executive summary

The methodology followed to prepare this report is based on the 2018 and 2019 European Union reports on open data maturity in Europe, with some adjustments made to accommodate the specific situation of Eastern Partnership countries as well as the focus on environmental information.

The report was prepared and updated between 2018 and 2020 as part of the EU-funded project - Implementation of the Shared Environmental Information System principles and practices in the Eastern Partnership countries (ENI SEIS II East). National input in preparation of the report was ensured through broad dialogue and consultation with various institutions in Georgia, in particular those related to the environment and statistics. In addition, experts across various policy domains, including IT and e-government, have been involved through participation in national and regional events. These activities allowed an exchange of views on the future of e-government and open data in the cross-cutting domain of the environment in Georgia. As a result, the document presents an overview of the national e-government framework, the maturity level of open data and dissemination of environmental information in Georgia. The analysis covered:

- a review of the policy framework to examine the directions and practical arrangements set out for environmental information dissemination using open data and e-government solutions;
- review of the legal framework to determine the existing legal requirements that define the areas of e-government, open data and environmental data and information dissemination;
- assessment of the technological solutions to determine the existing technical capabilities and improvements that need to be implemented in future.

Based on the above, the document proposes a roadmap that includes measures focused on the development of e-government and open data frameworks, which would greatly support the environmental domain. The road map is designed to be a living document throughout the implementation process and a benchmark to assess progress at various stages of development.

### **E-government**

Georgia has made considerable progress in the area of e-government. In 2015, the practical plan for e-government development was introduced by the Public Administration Reform Roadmap 2020, which covers a comprehensive conceptual framework for the development of e-government. As the strategic objectives were planned up to 2020, there is a need to evaluate the progress achieved in the area of e-government and, based on existing objectives, introduce the action plan for the period of 2021–2025.

Georgia has developed technological solutions for data exchange between public authorities and security procedures for governmental information systems maintenance. However, not all essential interoperability areas are covered. Thus, additional procedures should be established in order to ensure an effective interoperability framework.

Responsibilities in the area of e-government are spread among various public authorities and sometimes overlap. The Data Exchange Agency and the Public Service Development Agency are the main institutions driving e-government, including the implementation of e-services,



adoption of data exchange and description standards, and development of technological solutions. Often, new e-government projects in Georgia are initiated by various institutions responsible for different governmental domains. The implementation of e-government initiatives could be accelerated by greater coordination at the central level.

E-government IT infrastructure was significantly developed in the last decade. One of the examples is the e-service portal (my.gov.ge) that currently provides multiple e-services and has an increasing number of users.

### **Open data**

The existing legal framework in Georgia defines the main principles of access to public information and open data. However, the legislation lacks the enforcement mechanisms and consequently not many public institutions disseminate public information online. The supporting legislation on the procedures for open data preparation, update, quality control and dissemination has yet to be developed.

The establishment of the Open Data Portal has pushed forward the open data initiative. This portal enables public access to open data and allows any interested person or entity to process, use and reuse the data for various purposes. The portal is enriched by metadata describing available datasets, although it does not follow the international metadata standards.

Moreover, open data initiatives are supported by the non-governmental organisations (NGOs). For example, a database of public information was compiled through an NGO initiative, by collecting data and information available from public institutions.

### **Environmental information sharing and dissemination**

Georgia is updating legislation in the area of environmental data and information sharing and dissemination with the main principles being set up in the Law on Environmental Protection. The current legislation covers the distribution of responsibilities and institutional set-up; however, it lacks practical arrangements, introducing procedures based on open data principles as a new way of public information dissemination in the environmental domain.

In recent years (2018–2020), Georgia has enhanced IT infrastructure in the area of the environment and currently provides multiple advanced platforms for environment information – e.g. air and water. These platforms are well developed and provide possibilities to increase environmental information sharing and dissemination in the near future. On the other hand, there is no single web access point, which would allow the public to easily access all web platforms in the area of the environment.

### **Suggested recommendations**

Following the analysis of the current situation, a proposed roadmap outlines key areas for future development in the field of open data and dissemination of environmental information, and provides concrete measures for improvement. Additionally, to facilitate the implementation of the roadmap, a number of examples and recommendations are provided in the report “Open data and e-government good practices for fostering environmental information sharing and dissemination”.

The success and rapid advancement of the country in this challenging domain remain strongly dependent on clear priority-setting, multi-disciplinary teamwork and regular monitoring of progress. Furthermore, once progress is made in one or several areas proposed for



consideration, readjustments and amendments of the roadmap will be needed to keep it relevant and focused on key priorities for the country.

The measures recommended for Georgia in the context of the roadmap have been grouped into the following categories: policy-related, legal and technical measures. They cover, in particular, the following issues:

- Policy measures: referring, among others, to the adoption of an e-government strategy and open data policy and supporting practical arrangements for open data collection, updating, quality control and dissemination.
- Legal measures: referring, among others, to the revision of the organisational framework in the area of the environment and adoption of international standards for interoperability and metadata description;
- Technical measures: referring, among others, to the development of an integrated information system and a single access point for environmental information, updating licencing terms and conditions, preparation of metadata description and enhancing the multilingual aspect of web portals and websites in the area of the environment.

For example, in order to practically implement metadata standards, the multi-disciplinary team should be set up to address and oversee the implementation of all of the above-presented measures. This initiative could be launched by technical experts who have substantial expertise in data exchange and interoperability, however, a strong political back up needs to be provided throughout the implementation process. The priority in the implementation could address the following aspects:

- Policy measures, which could cover selecting the international metadata standard as the direction allowing a clear description of the data and information in a unified way, as well as ensuring metadata interoperability;
- Legal measures, which could cover the preparation of legal documents specifying a standard for metadata description and related metadata preparation, updating and quality control procedures;
- Technical measures, which could cover the implementation of the metadata standard into existing information systems, as well as the development of metadata exchange mechanisms.

All the measures need to be seen in strong interaction and interdependence with each other and the impact of their gradual implementation closely monitored, as it might bring systemic changes across the whole data and information chain.



## 3 Readiness of environmental information

### 3.1 E-government, open data and environmental information – legal policy and institutional framework

This section contains a summary of the legal framework, public policy and institutional framework in terms of e-government, open data and environmental information.

#### 3.1.1 National policy and legal framework

##### 3.1.1.1 E-government

This section presents the main laws and policies shaping the e-government landscape in Georgia.

##### **Law on Electronic Communication<sup>18</sup>**

The Law on Electronic Communication sets up the legal and economic framework for activities carried out through electronic communication networks and facilities. It sets the principles for creating and regulating a competitive environment in the electronic communication field. In addition, it determines the functions of the national regulatory authority – the Georgian National Communications Commission. The law sets the rights and the obligations of individuals and legal persons possessing or using electronic communication networks, or for the provisions of services via such networks and facilities.

##### **Law on Information Security<sup>19</sup>**

The purpose of the Law on Information Security is to facilitate effective and efficient enforcement of information security, to provide information security rights and obligations to the public and private sector, and to define state control mechanisms for the implementation of information security policy.

##### **Law on Unified State Registry of Information<sup>20</sup>**

The purpose of the Law on Unified State Registry of Information is to facilitate the establishment of a unified state registry of registers, databases, services and information systems within Georgia's public sector. The law also:

- establishes the principle of technological neutrality in receiving, transferring, and interoperability of information in the public sector;
- regulates basic principles for the establishment, use and modification of registers, databases, services and information systems, and standardisation of rules on maintenance of registers, databases, services and information systems;
- defines the main directions of state information policy on registers, databases, services and information systems.

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<sup>18</sup> <https://matsne.gov.ge/en/document/download/29620/26/en/pdf>

<sup>19</sup> [http://www.dea.gov.ge/uploads/GISA\\_ENG\\_FINAL\\_2015\\_ver.pdf](http://www.dea.gov.ge/uploads/GISA_ENG_FINAL_2015_ver.pdf)

<sup>20</sup> [http://www.dea.gov.ge/uploads/Law\\_on\\_Unified\\_State\\_Registry\\_of\\_Information.pdf](http://www.dea.gov.ge/uploads/Law_on_Unified_State_Registry_of_Information.pdf)



### **Public Administration Reform (PAR) Roadmap 2020<sup>21</sup>**

The main objective of the Public Administration Reform Roadmap 2020 is to design specific actions to support the development of an efficient, transparent and accountable public administration system in which e-governance plays a central role. The current PAR Roadmap takes place within the overall context of the EU-Georgia Association Agreement (AA)<sup>22</sup>. It aims to set up a comprehensive conceptual framework and tools for building transparent, predictable, responsible and efficient public administration, which would meet the demands of the society and correspond to European standards.

The PAR Roadmap designates specific government agencies to take actions in respect of developing e-services, information, and communication technologies (ICT) infrastructure, training personnel and raising awareness among the government agencies, citizens and businesses alike. In addition, it forms the basic framework for the engagement of government agencies (Data Exchange Agency and Public Service Data Agency included) in electronic governance.

### **A Digital Georgia: - e-Georgia strategy and action plan 2014-2018<sup>23</sup>**

The document “A Digital Georgia: e-Georgia strategy and action plan 2014–2018” provides a comprehensive framework for societal changes enabled by ICT. The vision for the e-Georgia strategy is defined<sup>24</sup> as “Georgia will have a more efficient and effective public sector offering, providing integrated, secure and high-quality e-services. These will improve the usage of and the participation in e-services by the public and in turn enable an ICT-driven and sustainable economic growth.”

The thematic priorities are grouped in:

- Service areas:
  - e-services;
  - e-participation and open government;
  - e-health;
  - Public Finance Management System;
  - e-business;
- ICT hub Georgia: the goal is to become a leading competitive and innovative business environment in the field of ICT in the Caucasus region through the definition of areas for ICT investments, accumulating skills and knowledge, and attracting talents globally;
- ICT enablers:
  - infrastructure: improve internet access and basic services such as identification/authentication<sup>25</sup>;
  - e-security: strengthen cybersecurity and ensure the smooth functioning of the crucial national infrastructure;

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<sup>21</sup> [http://gov.ge/files/425\\_49309\\_322150\\_15.07.21-PublicAdministrationReformRoadmap2020\(Final\)\(1\).pdf](http://gov.ge/files/425_49309_322150_15.07.21-PublicAdministrationReformRoadmap2020(Final)(1).pdf)

<sup>22</sup> Association Agreement between the European Union and the European Atomic Energy Community and their Member States, of the one part, and Georgia, of the other part (2014/494/EU), <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014D0494>

<sup>23</sup> <http://www.dea.gov.ge/uploads/eGeorgia%20Strategy.pdf>

<sup>24</sup> Due to an issue with the original translation in the official digital strategy, this report contains an adapted sentence. The translation discrepancies can be seen as a major issue in the country, which jeopardises smooth international collaboration.

<sup>25</sup> This relates to initiatives such as e-signature, e-id authentication, etc.



- skills and e-inclusion: improve “e-skills” of the general population and provision of modern ICT education;
- Enabling frameworks and governance: set up a proper organisational structure and a legal framework to enable digitalisation of public services, ensure the legal validity of electronic procedures, and ensure a proper interoperability framework among various actors in society;
- Awareness: building awareness for e-services, and fostering investments in ICT infrastructure, security and back-end systems.

The strategy was developed during the Twinning project “Promote the strengthening of e-governance in Georgia (E-Government Georgia)”<sup>26</sup> and has not been adopted officially. However, some of the measures of the strategy were included in the PAR Roadmap 2020.

### *3.1.1.2 Open data*

This section presents the main laws and policies shaping the open data initiative in Georgia.

#### **Constitution of Georgia<sup>27</sup>**

According to Article 24 of the Constitution, everyone should be free to receive and share information, and to express his opinion.

Article 37 of the Constitution guarantees the right of every citizen to access complete, objective and timely information on the state of the environment.

Article 41 of the Constitution states that every citizen of the country has the right to access public information and official documents stored in state institutions unless they contain state, professional or commercial secrets.

#### **General Administrative Code of Georgia<sup>28</sup>**

The General Administrative Code of Georgia (Article 2, Section 1, para. L) underlines that public information is any information stored at public institutions, as well as any information received, processed, created or sent by a public institution or by a public servant within an official capacity.

Public institutions have the obligation to proactively publish public information on electronic resources (Article 28, para. 2). The code applies to all public information, including environmental information.

#### **Decree of the Government of Georgia No. 219/26 August 2013 on the approval of the “Form of the electronic request of information and proactive disclosure of public information”<sup>29</sup>**

The decree contains standards for the proactive disclosure of public information, including the list of information to be published proactively. It also defines the rules for an electronic request of public information. In the context of this decree, public institutions (including environmental institutions) provide on their website a procedure (or application form) to request public information.

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<sup>26</sup> <https://www.aei.at/promote-the-strengthening-of-e-governance-in-georgia-e-government-georgia/?lang=en>

<sup>27</sup> <https://matsne.gov.ge/en/document/view/30346?publication=35>

<sup>28</sup> <https://matsne.gov.ge/en/document/view/16270?publication=26>

<sup>29</sup> [https://www.right2info.org/resources/publications/laws-1/laws\\_georgia\\_electronic-request-and-proactive-publication-of-public-information-government-decree\\_2013\\_eng/view](https://www.right2info.org/resources/publications/laws-1/laws_georgia_electronic-request-and-proactive-publication-of-public-information-government-decree_2013_eng/view)





The list does not specify any environmental information to be disseminated through electronic means. Nonetheless, the proactive availability of strategies, action plans, laws and services provided – including those related to environmental protection – are listed among the required information.

### *3.1.1.3 Environmental information*

This section presents the main laws and policies shaping the environmental information landscape in Georgia.

#### **Law on Environmental Protection<sup>30</sup>**

The Law on Environmental Protection regulates the rights and obligations of institutions, natural persons and legal entities (regardless of ownership, organisational and legal set-up) in the field of environmental protection. It also regulates the use of natural resources including its territorial waters, air, continental shelf and economic zone.

Furthermore, the law introduces the term ‘environmental information’ in line with the Aarhus Convention provisions. It also defines the environmental information system as a combination of (a) information collection (Article 26) and (b) monitoring systems (data collection, storage and analysis) (Article 27). The law states that environmental monitoring results should be available to the public (Article 27).

Finally, the law states the requirement that every four years the competent ministry<sup>31</sup> should publish a “National State of the Environment” report. The publication and dissemination should be financed from the state budget (Article 14). In order to produce the report, the law foresees that state bodies and legal entities under public law shall provide information on the environmental condition to the ministry free of charge and that it is available to them no later than two months after a request is made. No platform is specified regarding the publication of this report.

#### **Decree of the Government No. 502/18 August 2014 on the approval of the “Types and fees for services provided by the public legal entity under the Ministry of Environment Protection and Agriculture of Georgia – National Environment Agency”<sup>32</sup>**

The annexes to the decree define the services and data that are provided by the National Environment Agency for a fee. They include the types of services related to the provision of geological data, environment pollution monitoring data, hydrometeorological and hydrological data, climate data and studies, and specific flora assessment. Annex 15 of the same decree also defines the list of data and information that can be obtained free of charge. The decree was last revised in 2019.

Data can be requested by anyone under the condition of signing a contract with the National Environment Agency. The contract must define the scope and volume of the work including the fee of the service. Article 2 of the decree states that the agency will execute the contract only after payment.

Article 3 of the same decree mentions that the costs related to information access are not applicable to the Ministry of Environmental Protection and Agriculture, the Ministry of Justice, the Prosecutor’s Office of Georgia, the Ministry of Internal Affairs, the Ministry of Defence,

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<sup>30</sup> <https://matsne.gov.ge/ka/document/view/33340?publication=26>

<sup>31</sup> Or any successor of this entity

<sup>32</sup> <https://www.matsne.gov.ge/ka/document/view/2465275>



some departments within the Ministry of Finance, the State Audit Office or the Ministry of Economy and Sustainable Development.

### **Environmental Assessment Code<sup>33</sup>**

On 1 June 2017, Parliament adopted the Environmental Assessment Code. The document is in line with the EU Environmental Impact Assessment (EIA) and with the Strategic Environmental Assessment (SEA) directives and with the Convention on Environmental Impact Assessment in Transboundary Context (Espoo Convention)<sup>34</sup>. This code regulates matters related to strategic documents<sup>35</sup> and public or private activities which may have a significant impact on the environment, human life and/or health.

The code aims to:

- promote the protection of the environment, human life and/or health, cultural heritage and material assets in the implementation of strategic documents or activities which may have a significant impact on the environment, human life and/or health;
- ensure the exercise of a fundamental human right, namely to obtain timely, complete and objective information on the state of the environment, guaranteed by the Constitution of Georgia, as well as ensure public participation in environmental decision-making;
- acknowledge the environmental, social and economic interests of the State and the public during the decision-making process on the implementation of strategic documents or activities which may have a significant impact on the environment;
- apply standards of best international practice in the implementation of environmental assessment procedures.

In general, the Environmental Assessment Code includes (i) the introduction of an instrument for Strategic Environmental Assessment, (ii) the activities for the Environmental Impact Assessment, (iii) the classification of risks and impact, and public participation in every stage of the decision-making process.

### **Decree of the Government No. 400/17 June 2014, on the approval of the Social-Economic Development Strategy of Georgia 'Georgia 2020'<sup>36</sup>**

The strategy covers the main principles of the social-economic development that include the rational use of natural resources, environmental protection and sustainability, and the prevention of natural disasters.

This strategy encourages the use of modern technology in activities related to the protection of the environment. It also covers the need to develop modern water and waste management systems that are in accordance with EU environmental and technical standards. In addition, it includes the requirement to evaluate the environmental impact of infrastructure projects to

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<sup>33</sup> <https://matsne.gov.ge/en/document/view/3691981?publication=2>

<sup>34</sup> Protocol on Strategic Environmental Assessment and the Aarhus Convention on the Access to Environment Information

<sup>35</sup> As defined by the Environmental Assessment Code, a strategic document is a subordinate normative act of an administrative body issued in accordance with the legislation of Georgia, which establishes a future development framework for individual sectors pursuant to Chapter III of the Environmental Assessment Code and reflects the characteristics and/or volumes for the types of activities provided for by Annexes I and II of the Environmental Assessment Code.

<sup>36</sup> <https://matsne.gov.ge/en/document/view/2373855?publication=0>



reduce natural resource exploitation and enhance environmental protection. Moreover, the strategy aims to introduce modern models for forest management and innovative technologies to assist in maintaining the protection of forest biodiversity, water and soil in order to reduce forest degradation.

However, the strategy does not cover specific environmental information which should be available to the public. It is recommended that amending the document to include explicit references to the development of environmental information systems to support the environmental protection in other areas, e.g. biodiversity, be considered.

**Decree of the Government No. 1124/22 May 2018 on the approval of the 3<sup>rd</sup> National Environmental Action Programme of Georgia 2017–2021<sup>37</sup>**

This decree approved the 3<sup>rd</sup> National Environmental Action Programme of Georgia for the period 2017–2021. It provides an overview of the current situation of the institutional framework in Georgia and sets the path for the future.

The decree is based on the Social-Economic Development Strategy of Georgia ‘Georgia 2020’ approved by the Government<sup>38</sup>. The decree is also adopted in the context of the EU-Georgia Association Agreement, the UN Sustainable Development Goals and the national strategic framework for environmental protection and management.

Hence, the decree reflects the strong commitment of Georgia to comply with international treaties and agreements to which the country is a party.

**Decree of the Government No. 262/9 October 2013 on the “Establishment of the governmental commission on the development of the National Spatial Data Infrastructure in Georgia”<sup>39</sup>**

This decree mandates the National Agency for Public Registry of the Ministry of Justice to coordinate National Spatial Data Infrastructure (NSDI) development, to form the Secretariat to the NSDI State Commission, and to establish and coordinate thematic working groups. Currently, six groups are established: (1) legislation, (2) public relations, (3) business model, (4) GIS, (5) IT and (6) education.

More importantly, Article 3 of the decree requires the NSDI to comply with the INSPIRE Directive<sup>40</sup>. Article 4 entitles all ministries (including the Ministry of Environmental Protection and Agriculture) represented in the NSDI State Commission to ensure the participation of their representatives along with representatives of their subordinated bodies and legal entities in the thematic working groups. The ministries are further requested to provide legal, administrative and technological support for effective implementation of activities of the thematic working groups. The Commission and the working groups are responsible for formulating, promoting and overseeing the effective implementation of state policy on NSDI.

Other laws and decrees related to spatial data are being prepared and have yet to be adopted<sup>41</sup>:

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<sup>37</sup> <http://extwprlegs1.fao.org/docs/pdf/geo180258.pdf>

<sup>38</sup> Decree of Government of Georgia No. 400 of 17 June 2014 on the approval of the Social-Economic Development Strategy of Georgia, ‘Georgia 2020’

<sup>39</sup> <https://matsne.gov.ge/ka/document/view/2044006>

<sup>40</sup> <https://inspire.ec.europa.eu/inspire-directive/2>

<sup>41</sup> According to the presentation “Establishment of NSDI and Geographical Data Sharing” by National Agency of Public Registry during the national roundtable on 13 June 2019, in Tbilisi, Georgia.



- Law on National Spatial Data Infrastructure;
- Decree of the Government of Georgia on “Rules on the development, update and maintenance of metadata for the purpose of description, inquiry, provision and use of spatial datasets and electronic services related to spatial data”;
- Decree of the Government of Georgia on “Categorisation of geodata”;
- geodata sharing agreement.

#### Other environment-related legislation

There are other pieces of legislation covering specific areas of the environment or which are environment-related with relevance for the topics addressed by the report, as follows (presented in the table below).

Table 1. List of environment-related legislation

| No  | Title of the document  | Date |
|-----|--|------|
| 1.  | Law on Living Genetically Modified Organisms <sup>42</sup>                           | 2014 |
| 2.  | Waste Management Code <sup>43</sup>  | 2014 |
| 3.  | Law on Fees for Use of Natural Resources <sup>44</sup>                               | 2004 |
| 4.  | Red List and Red Book of Georgia <sup>45</sup>                                       | 2003 |
| 5.  | Forest Code <sup>46</sup>  | 1999 |
| 6.  | Law on Ambient Air Protection <sup>47</sup>  | 1999 |
| 7.  | Law on Pesticides and Agrochemicals <sup>48</sup>                                    | 1998 |
| 8.  | Law on Electricity and Natural Gas <sup>49</sup>                                     | 1997 |
| 9.  | Law on Water <sup>50</sup>   | 1997 |
| 10. | Law on Subsoil <sup>51</sup>   | 1996 |
| 11. | Law on Environmental Protection <sup>52</sup>  | 1996 |
| 12. | Law on Environmental Impact Permits <sup>53</sup>                                    | 1996 |
| 13. | Law on the System of Protected Areas <sup>54</sup>                                   | 1996 |
| 14. | Law on New Varieties of Plants and Animals <sup>55</sup>                             | 1996 |
| 15. | Law on the Transit and Import of Waste within the Territory of Georgia <sup>56</sup> | 1995 |
| 16. | Law on the Ownership of Agricultural Land <sup>57</sup>                              | 1996 |

<sup>42</sup> <https://matsne.gov.ge/en/document/download/2516880/1/en/pdf>

<sup>43</sup> <http://www.moe.gov.ge/res/docs/3388narchenebis-martvis-kodeqsi-2017.pdf>

<sup>44</sup> <https://matsne.gov.ge/en/document/download/28948/24/en/pdf>

<sup>45</sup> <https://matsne.gov.ge/ka/document/view/12514?publication=15>

<sup>46</sup> [http://www.moe.gov.ge/res/docs/44825\\_tyis\\_kodeksi.pdf](http://www.moe.gov.ge/res/docs/44825_tyis_kodeksi.pdf)

<sup>47</sup> [http://www.moe.gov.ge/res/docs/27869\\_kanoni\\_atmosperuli\\_haeris\\_shesakheb.pdf](http://www.moe.gov.ge/res/docs/27869_kanoni_atmosperuli_haeris_shesakheb.pdf)

<sup>48</sup> <https://matsne.gov.ge/en/document/download/18106/9/en/pdf>

<sup>49</sup> <https://matsne.gov.ge/en/document/download/31744/32/en/pdf>

<sup>50</sup> [http://www.moe.gov.ge/res/docs/50978\\_kanoni\\_wylis\\_shesaxeb.pdf](http://www.moe.gov.ge/res/docs/50978_kanoni_wylis_shesaxeb.pdf)

<sup>51</sup> <https://matsne.gov.ge/en/document/download/33040/14/en/pdf>

<sup>52</sup> <https://www.matsne.gov.ge/ka/document/download/33340/19/en/pdf>

<sup>53</sup> <https://matsne.gov.ge/en/document/download/20206/13/en/pdf>

<sup>54</sup> <https://matsne.gov.ge/en/document/download/32968/15/en/pdf>

<sup>55</sup> <https://matsne.gov.ge/en/document/download/1160635/0/en/pdf>

<sup>56</sup> <https://matsne.gov.ge/en/document/view/28456?publication=10>

<sup>57</sup> <https://matsne.gov.ge/en/document/download/32998/14/en/pdf>



### 3.1.2 Main international policies and agreements

The main policies and agreements are presented below.

#### 3.1.2.1 Multilateral environmental agreements setting out public access to information and reporting obligations

This section presents the main multilateral environmental agreements that set out public access to information and reporting obligations.

##### **Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)<sup>58</sup>**

Georgia ratified the Aarhus Convention on 11 April 2000. Within its broad scope, the convention sets out obligations to provide effective public access to environmental information held by various public authorities, public participation in decision-making and access to justice in environmental matters. The progress of implementation of the Aarhus Convention by Georgia is reflected in national implementation reports to the Convention.<sup>59</sup>

The provisions of the national legislation<sup>60</sup> implement the requirements of the first pillar of the Aarhus Convention and in some cases are even stricter (e.g. according to the General Administrative Code of Georgia, public information should be issued immediately or within 10 days of request submission). The national legislation contains no provision or norm corresponding to “encouraging operators, whose activities have a significant impact on the environment, to inform the public regularly of the environmental impact of their activities and products”. The report on the implementation of the Convention from the 2017 reporting cycle states that no violation of the provisions of the information pillar was observed<sup>61</sup>.

##### **Protocol on Pollutant Release and Transfer Registers to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Protocol on PRTRs)<sup>62</sup>**

Georgia signed the UNECE Protocol on Pollutant Release and Transfer Registers to the Aarhus Convention on 21 May 2003 but has not yet ratified it. The Protocol sets out obligations to establish pollutant release and transfer registers, namely a national database or inventory of potentially hazardous chemical substances released into the air, water and soil and off-site transfers. As such, the inventory allows public authorities to track each release and transfer of a hazardous chemical substance consistently over time.

##### **Other related multilateral environmental agreements**

This section analyses selected multilateral environmental agreements (MEAs) in terms of public access to information, reporting and monitoring requirements. The MEAs that are presented in the table below were chosen as examples to reflect on whether the country should carry out relevant monitoring, report data in thematic areas of water, air, biodiversity, climate change and the ozone layer and provide effective public access to information. For this report, the analysis focuses on the following:

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<sup>58</sup> <http://www.unece.org/env/pp/welcome.html>

<sup>59</sup> <https://aarhusclearinghouse.unece.org/national-reports>

<sup>60</sup> The General Administrative Code of Georgia, the Law of Georgia on State Secrets, the Law of Georgia on Civil Safety, the Law of Georgia on Public Health, and the Law of Georgia on Environmental Protection

<sup>61</sup> [https://www.unece.org/ro/env/pp/reports\\_trc\\_implementation\\_2017.html](https://www.unece.org/ro/env/pp/reports_trc_implementation_2017.html)

<sup>62</sup> <https://www.unece.org/env/pp/prtr.html>



- **public access to information.** In this respect, a review of official Georgian governmental institution portals was performed. The analysis shows the extent to which publicly available information covers the requirements of the MEA presented in the table below.
- **reporting.** In this case, a review of MEA related databases was performed to determine if the official national reports are provided by the Georgian governmental institution was performed. The analysis indicates whether the national report related to each specific MEA was submitted on time as required by the MEA presented in the table below.
- **monitoring activities.** For this aspect, a review of the monitoring activities as defined by the respective MEA and available in the official portals, as well as reports provided by governmental institutions, was performed. The analysis shows if the monitoring activity was performed on time as required by the MEA presented in the table below.

The table below presents the examples of the MEAs analysed in this section.

Table 2. Analysis of selected MEAs in terms of public access to information, reporting and monitoring requirements (as of May 2020, developed by the report's authors)

| MEA   | Public access to information | Reporting         | Monitoring        |
|---|------------------------------|-------------------|-------------------|
| UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention)   | Not a party                  |                   |                   |
| UNECE Convention on Long-range Transboundary Air Pollution  | Yes <sup>63</sup>            | Yes <sup>64</sup> | Yes <sup>65</sup> |
| UNECE Protocol to the 1979 Convention on Long-range Transboundary Air Pollution on the Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30 per cent | Not a party                  |                   |                   |
| UNECE Protocol to the 1979 Convention on Long-range Transboundary Air Pollution Concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes        | Not a party                  |                   |                   |
| UNECE Protocol to the 1979 Convention on Long-range Transboundary Air Pollution to Abate Acidification, Eutrophication and Ground-level Ozone                               | Not a party                  |                   |                   |
| UN Convention on Biological Diversity   | Yes <sup>66</sup>            | Yes <sup>67</sup> | Yes <sup>68</sup> |
| UN Framework Convention on Climate Change   | Yes <sup>69</sup>            | Yes <sup>70</sup> | Yes <sup>71</sup> |
| UN Vienna Convention for the Protection of the Ozone Layer  | Yes <sup>72</sup>            | Yes <sup>73</sup> | Yes <sup>74</sup> |

<sup>63</sup> <http://air.gov.ge/>

<sup>64</sup> [https://www.ceip.at/ms/ceip\\_home1/ceip\\_home/status\\_reporting/2019\\_submissions/](https://www.ceip.at/ms/ceip_home1/ceip_home/status_reporting/2019_submissions/)

<sup>65</sup> <http://air.gov.ge/>

<sup>66</sup> <http://eiec.gov.ge/%e1%83%97%e1%83%94%e1%83%9b%e1%83%94%e1%83%91%e1%83%98/Biodiversity.aspx>

<sup>67</sup> <https://www.cbd.int/doc/world/ge/ge-nr-05-en.pdf>

<sup>68</sup> <http://eiec.gov.ge/%e1%83%97%e1%83%94%e1%83%9b%e1%83%94%e1%83%91%e1%83%98/Biodiversity.aspx>

<sup>69</sup> <https://www.geostat.ge/en/modules/categories/565/environmental-indicators>

<sup>70</sup> <https://unfccc.int/sites/default/files/resource/Geonc3.pdf>

<sup>71</sup> <https://unfccc.int/sites/default/files/resource/Geonc3.pdf>

<sup>72</sup>

[https://ozone.unep.org/countries/data?report\\_type=0&party%5B0%5D=81&period\\_start=1986&period\\_end=2019&output\\_type=odp-CO2e-tonnes](https://ozone.unep.org/countries/data?report_type=0&party%5B0%5D=81&period_start=1986&period_end=2019&output_type=odp-CO2e-tonnes)

<sup>73</sup> [https://ozone.unep.org/Meeting\\_Documents/research-mgrs/6orm/6orm-Georgia.pdf](https://ozone.unep.org/Meeting_Documents/research-mgrs/6orm/6orm-Georgia.pdf)

<sup>74</sup> [https://ozone.unep.org/Meeting\\_Documents/research-mgrs/6orm/6orm-Georgia.pdf](https://ozone.unep.org/Meeting_Documents/research-mgrs/6orm/6orm-Georgia.pdf)



| MEA  | Public access to information | Reporting         | Monitoring        |
|--|------------------------------|-------------------|-------------------|
| <b>UN Montreal Protocol on Substances that Deplete the Ozone Layer</b> | Yes <sup>75</sup>            | Yes <sup>76</sup> | Yes <sup>77</sup> |

\* Explanation of the markings in the table:

- Yes – the country provides publicly available information on official portals or official reports related to MEAs;
- No – the country does not provide information on official portals or official reports;
- Not a party – the country has not acceded to the respective MEA.

### 3.1.2.2 Other international fora promoting sharing and accessibility of environmental information

This section presents other international fora which promote the sharing and accessibility of information.

#### “Environment for Europe” process

The first “Environment for Europe” ministerial conference took place in 1991 at Dobris Castle in the former Czechoslovakia. A set of basic guidelines for a pan-European cooperation strategy was laid down<sup>78</sup>. The Shared Environmental Information System (SEIS) in the pan-European region was launched at the “Environment for Europe” ministerial conference in 2011.

In 2016, the eighth “Environment for Europe” ministerial conference<sup>79</sup> took place in Batumi, Georgia. The ministers also signed the ministerial declaration<sup>80</sup> “Greener, cleaner and smarter!” calling for the continuation of efforts and the further development of national information systems to have SEIS in place in the countries of Europe and Central Asia by 2021<sup>81</sup>.

The next “Environment for Europe” ministerial conference will review progress in the area of environment and celebrate 30 years of the “Environment for Europe” process.

#### Open Government Partnership initiative<sup>82</sup>

The Open Government Partnership (OGP) is a multilateral initiative of national reformers, all determined to make their governments more responsive to the needs of the public. Georgia has been part of the OGP initiative since 2011. Out of 24 commitments in the OGP Action Plan of Georgia 2016–2018, Georgia has completed 15.

Currently, Georgia is implementing 28 commitments from the OGP Action Plan of Georgia 2018–2020. These commitments, among others, include the improvement of public services, the establishment of an electronic portal for meeting the Environmental Assessment Code requirements, the development of a new electronic system for monitoring UN Social

<sup>75</sup> <https://ozone.unep.org/countries/profile/geo>

<sup>76</sup> [https://ozone.unep.org/Meeting\\_Documents/research-mgrs/6orm/6orm-Georgia.pdf](https://ozone.unep.org/Meeting_Documents/research-mgrs/6orm/6orm-Georgia.pdf)

<sup>77</sup> [https://ozone.unep.org/Meeting\\_Documents/research-mgrs/6orm/6orm-Georgia.pdf](https://ozone.unep.org/Meeting_Documents/research-mgrs/6orm/6orm-Georgia.pdf)

<sup>78</sup> More information: [https://www.unece.org/env/efe/historyofefe/history.en1991\\_01.html](https://www.unece.org/env/efe/historyofefe/history.en1991_01.html)

<sup>79</sup> The Conference was organised based on the provisions of the Environment for Europe Reform Plan, adopted in 2009, and in accordance with the procedures for the Batumi Ministerial Conference, adopted in 2014.

<sup>80</sup> <https://www.unece.org/fileadmin/DAM/env/documents/2016/ece/ece.batumi.conf.2016.2.add.1.e.pdf>

<sup>81</sup> The main outcome of the conference is available here: <https://www.unece.org/index.php?id=41721>

<sup>82</sup> <https://www.opengovpartnership.org/countries/georgia>



Development Goals (SDGs), open data collection and publication. The progress of the implementation of these commitments has yet to be evaluated.

### *3.1.2.3 Cooperation with the EU*

This section provides an overview of the main agreements with the EU.

#### **Declaration on Cooperation on Environment and Climate Change in the Eastern Partnership<sup>83</sup>**

In 2016, the European Union (EU) and the countries of the Eastern Partnership (EaP) adopted the declaration on Cooperation on Environment and Climate Change (Luxembourg Declaration). The declaration aims to strengthen regional cooperation on environmental and climate action, and sustainable development in the Eastern Partnership region by implementing relevant international commitments such as the 2030 Agenda for Sustainable Development and the Paris Agreement on Climate Change. It seeks to raise awareness among and enhance cooperate between relevant stakeholders, support the involvement of civil society in the decision-making process, strategic planning and implementation, and monitor the results of implementation of environmental policies, programmes and plans, and other commitments.

The second Eastern Partnership (EaP) ministerial meeting on the environment and climate change took place on 9 November 2018 in Luxembourg, co-organised by the European Commission and Austrian Presidency. The progress achieved by the countries was discussed and assessed in view of further strengthening that cooperation<sup>84</sup>. The third Eastern Partnership high-level meeting is scheduled now for early 2021 (while only a virtual summit will take place on 18 June 2020 due to coronavirus restrictions).

#### **EU-Georgia Association Agreement<sup>85</sup>**

In June 2016, an Association Agreement between EU and Georgia entered into force (signed in June 2014). Among other matters, the agreement defines areas for environmental cooperation and goals to be achieved within an established timeframe. The Association Agreement addresses the following environmental issues:

- environmental governance and integration of environmental issues into other policy areas;
- air quality;
- water quality and resource management including the marine environment;
- waste management;
- nature protection;
- industrial pollution and industrial hazards;
- chemical management;
- climate action.

The Ministry of Environmental Protection and Agriculture, in cooperation with the EU, has developed a roadmap for the implementation of the EU-Georgia Association Agreement on the environment and climate action. This roadmap enables the ministry to adopt the legal

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[https://ec.europa.eu/environment/international\\_issues/pdf/declaration\\_on\\_cooperation\\_eastern\\_partnership.pdf](https://ec.europa.eu/environment/international_issues/pdf/declaration_on_cooperation_eastern_partnership.pdf)

<sup>84</sup> Georgia progress factsheet: [https://eeas.europa.eu/sites/eeas/files/eap\\_factsheet\\_georgia\\_en\\_web.pdf](https://eeas.europa.eu/sites/eeas/files/eap_factsheet_georgia_en_web.pdf)

<sup>85</sup> [https://eeas.europa.eu/delegations/georgia\\_en/9740/EU/Georgia%20Association%20Agreement](https://eeas.europa.eu/delegations/georgia_en/9740/EU/Georgia%20Association%20Agreement)





framework and policymaking to meet the requirements made by the environment and climate action chapters of the Association Agreement.

Georgia has made good progress in implementing new legislation in the field of waste, similar to the EU waste legislation. The Waste Management Code and a number of related laws<sup>86</sup> have been already adopted. The new Environmental Assessment Code is in force and the Law on Environmental Liability has been prepared. Georgia has also drafted a new Forest Code, a Law on Biodiversity, and a Law on Water in compliance with EU-Georgia Association Agreement (draft laws are still to be adopted). In addition, several resolutions<sup>87</sup>, which impact the quality of ambient air, were adopted or amended. Georgia also became a party to the Paris Agreement, although implementation of its commitments depends on the availability of external funding. Georgia still lacks a legal framework on climate change, defining institutional mandates and coordination<sup>88</sup>.

The developed laws have provisions ensuring access to data and information in respective thematic areas. The Association Agreement also envisages harmonisation of national legislation with the directive on public access to environmental information. The draft governmental decree on the approval of the “Rules of access to environmental information” is supposed to ensure the continuous disclosure of environmental information to the public.

#### **EaP Connect Project<sup>89</sup>**

The EaP Connect Project was launched in July 2015. It aims to link the national research and education networks in the partner countries to the pan-European research and education network GÉANT. It connects more than 2 million scientists, academics and students from 700 institutions across the region. The joint initiative of the EU, Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova and Ukraine is an example of the efforts undertaken to foster the creation of digital economies and promote open data in EaP countries<sup>90</sup>.

### **3.1.3 National standards, interoperability and quality control**

#### *3.1.3.1 Metadata standards*

The following table presents a brief description of metadata standards for open data, spatial data, environmental data and statistical data used in Georgia.

*Table 3. Metadata standards overview (as of May 2020)*

| <b>Component</b> | <b>Metadata standards</b>  |
|------------------|--|
| <b>Open data</b> | Georgia developed its own metadata standard for the publication of open data. The integration of the standard with the European standard DCAT-AP <sup>91</sup> would |

<sup>86</sup> E.g. the Law on the List Of Waste and Classification of Waste according to its Types and Properties, the Law on Municipal Waste Collection and Treatment, the Law on Collection and Treatment of Hazardous Wastes, the Law on Transportation of Waste.

<sup>87</sup> E.g.: the Law on Petrol Quality Standards, the Law on Quality Standards of Heavy Fuel Oil and Gas Oil, the Law on Diesel Norms, Methods of Analysis and Activities for their Implementation.

<sup>88</sup> [https://eeas.europa.eu/sites/eeas/files/2019\\_association\\_implementation\\_report\\_georgia.pdf](https://eeas.europa.eu/sites/eeas/files/2019_association_implementation_report_georgia.pdf)

<sup>89</sup> <https://www.eapconnect.eu/>

<sup>90</sup> EDP Analytical Report, Open Data in the European Union Neighbourhood, p. 9

<sup>91</sup> The DCAT Application Profile for data portals in Europe (DCAT-AP) is a specification based on the Data Catalogue Vocabulary (DCAT) developed by W3C. <https://joinup.ec.europa.eu/solution/dcat-application-profile-data-portals-europe>



| Component                   | Metadata standards  |
|-----------------------------|---|
|                             | require adaptation to capture additional metadata and enhance the technological solution for metadata exchange with the European Open Data Portal.  |
| <b>Spatial data</b>         | Spatial metadata is based on ISO 19110/19115/19119/19139 and spatial technological solutions are integrated according to the INSPIRE Directive <sup>92</sup> . The current standard requires a high number of fields to be filled, resulting in a complicated preparation process for spatial metadata. |
| <b>Environmental data</b>   | There has been no progress on revising the metadata standards for environmental information since 2010. <sup>93</sup>   |
| <b>Statistical metadata</b> | The National Statistics Office does not publish any metadata for statistical environment information datasets. Statistical metadata is based on the Statistical Data and Metadata Exchange (SDMX) <sup>94</sup> standard.   |

### 3.1.3.2 Interoperability

The Data Exchange Agency defines data standards and the principles of interoperability of information systems. The agency aims to reach the compatibility of information standards of Georgia with international standards. The adoption of the interoperability framework was set out as a key action for Georgia in “A Digital Georgia: e-Georgia strategy and action plan 2014–2018”. Although this strategy was not adopted, the actions related to interoperability were included in the PAR Roadmap 2020.

The official website of the Data Exchange Agency does not publish any interoperability frameworks. However, many institutions already exchange information using the resources provided by the Data Exchange Agency.

The implementation of common interoperability standards in information systems is restricted mostly due to an insufficiently developed legal framework. As a result, the generation of data from most national agencies is not in line with the rules, norms, specifications or standards of data reliability, quality and interoperability.

### 3.1.3.3 Quality control of environmental data

While there are no uniform quality control mechanisms for environmental data at the national level, the institutions have their own quality control procedures.

The analytical lab of the National Environment Agency, which performs water, air and soil analysis, follows the ISO 17025 standard<sup>95</sup>. The standard sets requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods and laboratory-developed methods.

To ensure the quality of statistical processes and products, the National Statistics Office complies with the requirements of the Law on Official Statistics, Article 4 “Basic principles of official statistics”, as well as the European Statistics Code of Practice, the UN Fundamental Principles of Official Statistics and the Quality Assurance Framework of the European Statistical System (QAF). The Methodology and Quality Management Division of the National Statistics

<sup>92</sup> Directive 2007/2/EU of the European Parliament and of the Council of 14 March 2007

<sup>93</sup> 3rd Environmental Performance Review of Georgia, UN, 2016

<sup>94</sup> [https://sdmx.org/?page\\_id=3425](https://sdmx.org/?page_id=3425)

<sup>95</sup> <https://www.iso.org/home/standards/popular-standards/isoiec-17025-testing-and-calibra.html>



Office, along with the sectoral departments, is responsible for the quality of produced statistical products and processes. The division carries out a quality audit of statistical processes and assesses the risks associated with the production of statistical data. The National Statistics Office has developed policy documents, guidelines and standard routine descriptions. These documents ensure the standardisation of statistical processes and products and the establishment of a unified quality assurance system.

### 3.1.4 Institutional framework for environmental information management and stakeholder involvement

The following diagram illustrates the main environmental information, e-governance and open data stakeholders.

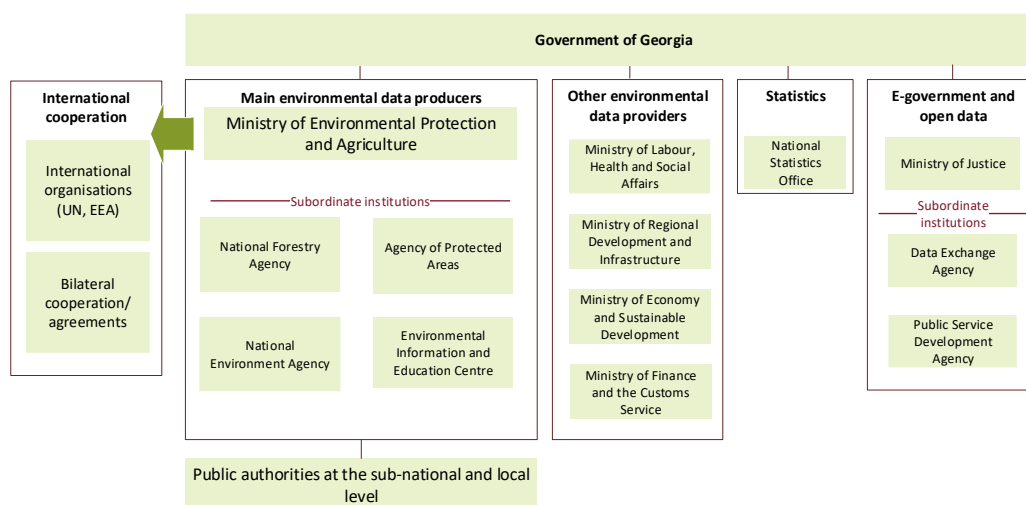


Figure 4. Institutional framework for environmental information, e-governance and open data in Georgia (as of May 2020, developed by the report's authors)

The following section describes the main stakeholders that are presented in the figure above.

#### **Ministry of Environmental Protection and Agriculture of Georgia (MEPA) - <http://mepa.gov.ge>**

MEPA is the main environmental institution in Georgia, which is responsible for overall governance and policymaking in the field of agriculture and the environment.

MEPA covers all aspects of environmental pollution control and regulation of natural resource extraction, use and protection (except minerals, oil and gas for which the State Agency of Oil and Gas under the Ministry of Economy and Sustainable Development and the National Agency of Mines are responsible).

The structure of MEPA has seen many changes in recent years. In 2011, the former Ministry of Environment Protection and Natural Resources was significantly downscaled. Some of the responsibilities of the ministry were moved to other ministries. Later, in 2013, the ministry regained its former functions almost entirely and re-established or established several key units. In 2017, MEPA was formed after the merger of the Ministry of Environment and Natural Resources Protection, and the Ministry of Agriculture.



**National Environment Agency (NEA) - <http://nea.gov.ge/>**

NEA is a legal entity under MEPA, which was set up in 2008. NEA is the only institution in Georgia to have a legal mandate for carrying out regular hydrometeorological observations and the monitoring of surface and ground waters, marine chemical and biological status, atmospheric air pollution, as well as soil contamination and monitoring natural hazards, etc.

The scope of the agency's activities, among others, includes the development and maintenance of environmental monitoring systems, the dissemination of environmental monitoring data and information, and the provision of meteorological services.

**Environmental Information and Education Centre (EIEC) - <http://eiec.gov.ge>**

The EIEC was established under MEPA in 2013 by transforming the Aarhus Centre. The centre supports the education for sustainable development, public participation in the decision-making process and collection and dissemination of environmental information, as well as performs the functions of the Aarhus Centres. The main roles and responsibilities<sup>96</sup> of the centre include:

- ensuring access to environmental information for relevant public institutions, academic, educational, non-governmental, private sector and international organisations through cooperation;
- collecting information about environmental projects, developing a publicly available database;
- introducing and managing the eco-labelling systems and eco-standards;
- developing an electronic library of environmental information and materials;
- at the request of MEPA, assessing the impact of the publication of environmental information;
- publishing environmental information on its website and other media sources (i.e. brochures).

In addition, the centre published the “Education for sustainable development – Strategy and Action plan 2019–2023” setting the priorities for the centre's activities in: management and coordination, preschool education, general education, higher education and research, the civil service, the academic sector and awareness-raising campaigns.

**National Forestry Agency - <http://forestry.gov.ge/>**

The National Forestry Agency was established under MEPA in 2010<sup>97</sup> to manage state forests. The main objective of the agency is to lead the sustainable management and performance monitoring of forest resources, including the sustainable use of biological resources of the Forest Fund of Georgia.

The agency is responsible for monitoring the Forest Fund, conducting the forest inventory, registering and publishing illegal logging (on its website), and registering timber use. The data are shared with the National Statistics Office.

**Agency of Protected Areas - <http://apa.gov.ge/en/>**

The Agency of Protected Areas was established under MEPA in 2008. The primary responsibility of the agency is to manage nature reserves, national parks, natural monuments,

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<sup>96</sup> <http://eiec.gov.ge/getfile/23c34834-5045-424b-9ba9-ad9687189d68/>.aspx

<sup>97</sup> Public Law of the Ministry of Environment and Natural Resources of Georgia Legal Entity - Approval of the Statute of the National Forestry Agency of Georgia - Order No. 50 of 26 December 2016



protected landscapes, biosphere reserves, world heritage sites and wetland sites of national and international importance.

The main tasks of the Agency of Protected Areas, among others, include the monitoring and collection of data on biodiversity and protected areas.

**Other environmental data providers:**

- **Ministry of Labour, Health and Social Affairs - <https://www.moh.gov.ge/>**  
The ministry is in charge of regulating the healthcare system, labour issues and the social security system in Georgia. In the context of the environment, the ministry is responsible for developing and implementing health, hygiene and epidemiological standards and norms, including requirements for the quality of drinking water.
- **Ministry of Economy and Sustainable Development - <http://www.economy.ge>**  
The Ministry of Economy and Sustainable Development includes functions that aim to promote policy integration, coherence and intragovernmental coordination. Through the Technical and Constructions Supervision Agency, the ministry plays an important role in the procedure of the environmental impact assessment. The ministry is also involved in urban planning. The state policy on energy and energy efficiency are the core areas of the Energy Policy Department under the ministry.
- **Ministry of Regional Development and Infrastructure - <http://www.mrdi.gov.ge>**  
The Ministry of Regional Development and Infrastructure is responsible for the implementation of regional development policy, including coordination and support of the development of water supply and sanitation systems. In addition, among other activities, the ministry is in charge of the construction, operation and closure of non-hazardous waste landfills, as well as the construction and management of waste transfer stations<sup>98</sup>.
- **Ministry of Finance and the Customs Service - <https://mof.ge>**  
The Ministry of Finance and the Customs Service is responsible for the regulation of the transboundary movement of waste, species of flora and fauna species (as defined in the Convention on International Trade in Endangered Species of Wild Fauna and Flora) and nuclear and radiological materials (together with MEPA).

**National Statistics Office - <https://www.geostat.ge/en>**

The activities of the National Statistics Office are regulated by the Law on Official Statistics.<sup>99</sup> The office is in charge of the collection of environment-related statistical data such as:

- household water usage per capita;
- water supply (including population connected to water supply);
- population connected to wastewater treatment;
- fertiliser and pesticide consumption;
- final energy consumption, total primary energy supply, energy intensity, renewable energy supply;
- passenger transport demand, freight transport demand, the composition of road motor vehicle fleets;
- water losses.

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<sup>98</sup> These stations are temporary stations used during the transport of wastes.

<sup>99</sup> [https://www.geostat.ge/media/20817/latest-Law-of-Georgia\\_2018.pdf](https://www.geostat.ge/media/20817/latest-Law-of-Georgia_2018.pdf)



The National Statistics Office prepares environment statistics based on information it receives from MEPA<sup>100</sup>. The office also publishes a comprehensive annual report containing yearly environmental statistics.

#### **Public authorities at sub-national and local levels**

The Local Self-Government Code (2014) gives more powers and financial resources to municipalities. Following the enactment of code, the number of institutions at the sub-national level has increased – namely, the number of cities having self-governing status is now 12 (from five) and the number of self-governing municipalities is 71 (from 64 previously).

The municipalities have the power to manage local natural resources, including water, forest and land resources owned by the municipality. Moreover, they are in charge of municipal waste management, water supply and sanitation. The municipalities – within their areas of responsibility – must provide water supply and sewerage services through appropriately entities licenced under private law (in cases where the relevant official provider does not deliver the above services).

#### **Institutions responsible for e-government and open data:**

- **Data Exchange Agency of the Ministry of Justice - <http://www.dea.gov.ge>**

The Data Exchange Agency (DEA) started operations in January 2010. The DEA's overall activity is divided into several sections. Each of them holds equal importance and strives to support the following fields:

- e-governance development,
- development and installation of the unified Georgian Governmental Gateway (3G) and its monitoring,
- the establishment of data exchange infrastructure.

Setting ICT standards for public sector entities and elaborating information security policies are other important responsibilities of the agency. The DEA is also responsible for maintaining the national Open Data Portal.

- **Public Service Development Agency - <https://sda.gov.ge>**

The Public Service Development Agency operates under the management of the Ministry of Justice of Georgia. The agency was established based on the Civil Registry Agency in June 2012.

The Public Service Development Agency performs the functions of the civil registry, which include maintaining a general register of the population, registering civil acts, issuing identity documents, carrying out procedures concerning citizenship issues, working on migration issues, apostilling and legalising documents. Furthermore, the activity of the agency has expanded into a new area of supporting the development of public services (including e-services). This covers assisting public institutions in improving their services and developing new ones, including generating ideas, diagnosing processes and identifying needs, drawing up recommendations on optimal ways of solving problems, devising and implementing plans for optimisation of processes, and assisting in continuous development.

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<sup>100</sup> The reports are further described in Section 3.2.1.1. Environmental assessment reports.



### Non-governmental organisations (NGOs)

NGOs have played an important monitoring role over the last decade. They develop reports on the implementation of national and international obligations, e.g. the alternative report on the implementation of the Aarhus Convention<sup>101</sup>. They also support decision-making with policy analysis and development. For example, NGOs undertook the technical work in support of drafting the National Biodiversity Strategy and Action Plan 2014–2020 and the 2013 National Forest Concept for Georgia. NGOs also developed a database of public information from public institutions.

### Regional Environmental Centre for the Caucasus (REC Caucasus) – <https://www.rec-caucasus.org>

Since its establishment, the REC Caucasus has implemented about 60 medium- and large-scale projects in the region which have contributed to policy development, capacity-building, facilitation of dialogue and networking, information exchange on environmental issues and supporting civil society in the South Caucasus states. The REC Caucasus provides numerous publications and video materials related to projects implemented in areas of land degradation, waste management, climate change, green economy, forests, biodiversity and water management.

## 3.2 Environmental data flows

The following diagram depicts the data flows between various institutions.

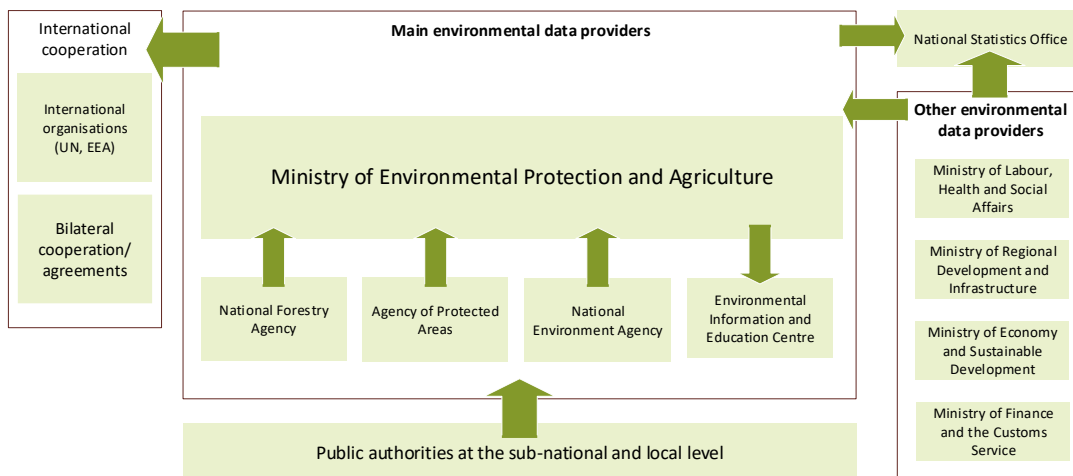


Figure 5. Environmental data flows in Georgia (as of May 2020)

Environmental data and information, both in electronic and paper formats, is fragmented and scattered among multiple non-governmental and Georgian state institutions. The EIEC is in charge of collecting environmental data and information and making it available to multiple end-users.

For this purpose, the EIEC has developed a web-based platform for the collection, processing and dissemination of environmental data and information. At this stage, the platform provides climate change, biodiversity and land management modules with relevant data and

<sup>101</sup> [http://greenalt.org/wp-content/uploads/2014/04/Aarhus\\_convention\\_alternative\\_report\\_ENG\\_2014\\_final.pdf](http://greenalt.org/wp-content/uploads/2014/04/Aarhus_convention_alternative_report_ENG_2014_final.pdf)



information. The data and information collected within the platform are shared to the public through the EIEC website.

The major data flows in the fields of air protection, climate change, water resources and soil pollution are directed via the NEA, which is the main data producer.

Forestry data comes from the National Forestry Agency, while data on biodiversity and protected areas are provided by the Agency of Protected Areas. Data on waste emissions into the air and water are provided via the electronic system. Data on waste is provided by the entities providing waste management services, municipalities and other entities which have reporting obligations.

Data on violations of environmental legislation is produced by the Environmental Supervision Department of MEPA. The monitoring of violations also involves other government institutions, such as the Ministry of Health, Labour and Social Affairs, the National Statistics Office and the emergency department of the Ministry of Internal Affairs.

Environmental statistics are collected by the National Statistics Office, in the department of agricultural and environment statistics, which is split into two divisions: the Agricultural Statistics Division and the Environment Statistics Division.

### 3.2.1 Available environmental assessment reports, indicators and data

#### 3.2.1.1 Environmental assessment reports

The ENI SEIS II East website<sup>102</sup> summarises the environmental assessment reports prepared and made available by Georgian institutions. The main reports are described in the table below.

Table 4. List of main environmental reports by source in Georgia (as of May 2020, from ENI SEIS II East project website)

| Type of report   | Institution publishing the report   |
|--|---|
| <b>National environmental reports</b>                                    | State of the Environment Report<br>Prepared by: the Ministry of Environmental Protection and Agriculture<br>Data source: <a href="http://eiec.gov.ge/NavMenu/Documents/National-Reports.aspx">http://eiec.gov.ge/NavMenu/Documents/National-Reports.aspx</a><br>Last year published: 2014<br>Frequency: every four years  |
| <b>Specialised reports – climate (national communications to UNFCCC)</b> | Georgia’s National Communication Reports to the United Nations Climate Change Convention<br>Prepared by: the Ministry of Environmental Protection and Agriculture<br>data source: <a href="https://unfccc.int/resource/docs/natc/geonc3.pdf">https://unfccc.int/resource/docs/natc/geonc3.pdf</a><br>Last year published: 2015<br>Frequency: every five years   |
| <b>Specialised reports – air</b>   | Informative Inventory Report of Georgia 2007–2017 submitted under the Convention on Long-Range Transboundary Air Pollution<br>Prepared by: the Ministry of Environmental Protection and Agriculture<br>Data source: <a href="http://eiec.gov.ge/NavMenu/Documents/Annual-Reports.aspx?lang=ka-GE">http://eiec.gov.ge/NavMenu/Documents/Annual-Reports.aspx?lang=ka-GE</a><br>Frequency: annual<br>Last year published: 2019 |

<sup>102</sup> <https://eni-seis.eionet.europa.eu/east/countries/georgia>





| Type of report  | Institution publishing the report   |
|---|---|
| <b>Specialised reports – water</b>                          | Water Annual Report 2017<br>Prepared by: the Ministry of Environmental Protection and Agriculture and the National Agency of Environment<br>Data source: <a href="http://eiec.gov.ge/NavMenu/Documents/Annual-Reports.aspx?lang=ka-GE">http://eiec.gov.ge/NavMenu/Documents/Annual-Reports.aspx?lang=ka-GE</a><br>Frequency: annual<br>Last year published: 2018  |
| <b>Specialised reports – biodiversity and natural sites</b> | Fifth National Report to the Convention on Biological Diversity of Georgia<br>Prepared by: the Ministry of Environmental Protection and Agriculture<br>Data source: <a href="https://www.cbd.int/doc/world/ge/ge-nr-05-en.pdf">https://www.cbd.int/doc/world/ge/ge-nr-05-en.pdf</a><br>Frequency: every four years<br>Last year published: 2015   |
| <b>Specialised reports – land</b>                           | National Report on Land<br>Prepared by: the Ministry of Environmental Protection and Agriculture<br>Data source:<br><a href="http://www.eiec.gov.ge/%E1%83%97%E1%83%94%E1%83%9B%E1%83%94%E1%83%91%E1%83%98/Soil/Documents/Training-module/91044treningmoduli.aspx">http://www.eiec.gov.ge/%E1%83%97%E1%83%94%E1%83%9B%E1%83%94%E1%83%91%E1%83%98/Soil/Documents/Training-module/91044treningmoduli.aspx</a><br>Frequency: inconsistent<br>Last year published: 2017 |
| <b>Specialised reports – waste</b>                          | Not available   |
| <b>Indicator-based reports</b>                              | Not available   |
| <b>National Statistical Yearbook</b>                        | The annual statistical publication “Natural Resources of Georgia and Environmental Protection”<br>Prepared by: the National Statistics Office<br>Data source: <a href="https://www.geostat.ge/en/single-categories/109/environment">https://www.geostat.ge/en/single-categories/109/environment</a><br>Frequency: annual<br>Last year published: 2018   |
| <b>Report on sustainable development</b>                    | Georgia National Review 2016<br>Prepared by the Administration of the Government of Georgia<br>Data source:<br><a href="https://sustainabledevelopment.un.org/content/documents/1511Georgia%20national%20reviews.pdf">https://sustainabledevelopment.un.org/content/documents/1511Georgia%20national%20reviews.pdf</a><br>Frequency: annual<br>Last year published: 2016  |

### 3.2.1.2 UNECE environmental indicators produced by Georgia

At the moment, the National Statistics Office reports 16 UNECE environmental indicators. The public availability of these indicators is described in the table below.

Table 5. List of UNECE indicators produced on a regular basis by the government institutions in Georgia (as of May 2020) <sup>103</sup>

| Thematic areas              | UNECE Indicator                                 | Status             |
|-----------------------------|---|--------------------|
| <b>A. Air pollution and</b> | A1. Emissions of pollutants into the atmosphere | Publicly available |

<sup>103</sup> Most indicators are published on the National Statistics Office website:  
<https://www.geostat.ge/en/modules/categories/565/environmental-indicators>



| Thematic areas    | UNECE Indicator  | Status   |
|-------------------|--|--|
| ozone depletion   |  | Frequency: annual                                      |
|                   | A2. Ambient air quality in urban areas   | Publicly available <sup>104</sup><br>Frequency: annual |
|                   | A3. Consumption of ozone-depleting substances  | Publicly available<br>Frequency: annual                |
| B. Climate change | B1. Air temperature  | Not publicly available                                 |
|                   | B2. Atmospheric precipitation  | Not publicly available                                 |
|                   | B3. Greenhouse gas emissions   | Publicly available <sup>105</sup><br>Frequency: annual |
| C. Water          | C1. Renewable freshwater resources   | Publicly available <sup>106</sup><br>Frequency: annual |
|                   | C2. Freshwater abstraction   | Publicly available <sup>107</sup><br>Frequency: annual |
|                   | C3. Total water use  | Publicly available <sup>108</sup><br>Frequency: annual |
|                   | C4. Household water use per capita   | Publicly available<br>Frequency: annual                |
|                   | C5. Water supply industry and population connected to the water supply industry and C6. Connection of population to public water supply. | Publicly available<br>Frequency: annual                |
|                   | C7. Water losses   | Publicly available<br>Frequency: annual                |
|                   | C8. Reuse and recycling of freshwater  | Not publicly available                                 |
|                   | C9. Drinking water quality   | Not publicly available                                 |
|                   | C10. BOD and concentration of ammonium in rivers   | Publicly available <sup>109</sup><br>Frequency: annual |
|                   | C11. Nutrients in freshwater   | Publicly available <sup>110</sup><br>Frequency: annual |
|                   | C12. Nutrients in coastal seawaters  | Not publicly available                                 |
|                   | C13. Concentrations of pollutants in coastal seawater and sediments (except nutrients)   | Not publicly available                                 |
|                   | C14. Population connected to wastewater treatment  | Publicly available<br>Frequency: annual                |
|                   | C15. Wastewater treatment facilities   | Not publicly available                                 |

<sup>104</sup> <http://air.gov.ge/en/>

<sup>105</sup> [Greenhouse gas emissions in Georgia and its share in world emissions](#)

<sup>106</sup> <http://testwis.mepa.gov.ge/Wis/C1?id=2108>

<sup>107</sup> <http://testwis.mepa.gov.ge/News/Topic?id=2109>

<sup>108</sup> <http://testwis.mepa.gov.ge/News/Topic?id=2110>

<sup>109</sup> <http://testwis.mepa.gov.ge/Wis/C11?id=2121>

<sup>110</sup> <http://testwis.mepa.gov.ge/Wis/C11?id=2122>



| Thematic areas          | UNECE Indicator   | Status                                  |
|-------------------------|---|---|
|                         | C16. Polluted (non-treated) wastewaters                         | Not publicly available                  |
| <b>D. Biodiversity</b>  | D1. Protected areas   | Not publicly available                  |
|                         | D2. Biosphere reserves and wetlands of international importance | Not publicly available                  |
|                         | D3. Forests and other wooded lands                              | Not publicly available                  |
|                         | D4. Endangered and protected species                            | Not publicly available                  |
|                         | D5. Trends in the number and distribution of selected species   | Not publicly available                  |
|                         | D6. Invasive alien species                                      | Not publicly available                  |
| <b>E. Land and soil</b> | E1. Land uptake   | Not publicly available                  |
|                         | E2. Areas affected by soil erosion                              | Not publicly available                  |
| <b>F. Agriculture</b>   | F1. Irrigation  | Not publicly available                  |
|                         | F2. Fertiliser consumption                                      | Publicly available<br>Frequency: annual |
|                         | F3. Gross nitrogen balance                                      | Not publicly available                  |
|                         | F4. Pesticide consumption                                       | Publicly available<br>Frequency: annual |
| <b>G. Energy</b>        | G1. Final energy consumption                                    | Publicly available<br>Frequency: annual |
|                         | G2. Total primary energy supply                                 | Publicly available<br>Frequency: annual |
|                         | G3. Energy intensity  | Publicly available<br>Frequency: annual |
|                         | G4. Renewable energy consumption                                | Publicly available<br>Frequency: annual |
|                         | G5. Final electricity consumption                               | Not publicly available                  |
|                         | G6. Gross electricity production                                | Not publicly available                  |
| <b>H. Transport</b>     | H1. Passenger transport demand                                  | Publicly available<br>Frequency: annual |
|                         | H2. Freight transport demand                                    | Publicly available<br>Frequency: annual |
|                         | H3. Composition of road motor vehicle fleet by fuel type        | Publicly available<br>Frequency: annual |
|                         | H4. Age of road motor vehicle fleet                             | Publicly available<br>Frequency: annual |
| <b>I. Waste</b>         | I1. Waste generation  | Not publicly available                  |
|                         | I2. Management of hazardous waste                               | Not publicly available                  |
|                         | I3. Waste reuse and recycling                                   | Not publicly available                  |
|                         | I4. Final waste   | Not publicly available                  |
| <b>J. Environmental</b> | J1. Environmental protection expenditure                        | Not publicly available                  |



| Thematic areas | UNECE Indicator | Status |
|----------------|-----------------|--------|
| financing      |                 |        |

The table below provides a summary of the performance of UNECE environmental indicators provided by the institutions of Georgia as presented on the ENI SEIS II East website.

Table 6. Assessment of performance in producing UNECE indicators (as of May 2020, ENI SEIS II East website)<sup>111</sup>

| Thematic areas                       | Evaluation |
|--------------------------------------|------------|
| A. Air pollution and ozone depletion |            |
| B. Climate change                    |            |
| C. Water                             |            |
| D. Biodiversity                      |            |
| E. Land and soil                     |            |
| F. Agriculture                       |            |
| G. Energy                            |            |
| H. Transport                         |            |
| I. Waste                             |            |
| J. Environmental financing           |            |

|           |     |     |     |      |
|-----------|-----|-----|-----|------|
| 0/No data | 25% | 50% | 75% | 100% |
|-----------|-----|-----|-----|------|

It is recommended that Georgia increases the number of produced indicators, and provides mechanisms to visualise, download and analyse them. Moreover, indicators should be used for reporting and assessment preparation in the area of the environment.

#### Data and information published

The table below lists data and information on the National Statistics Office website and other environmental data platforms.

Table 7. Environmental data and information published by national institutions (as of May 2020)

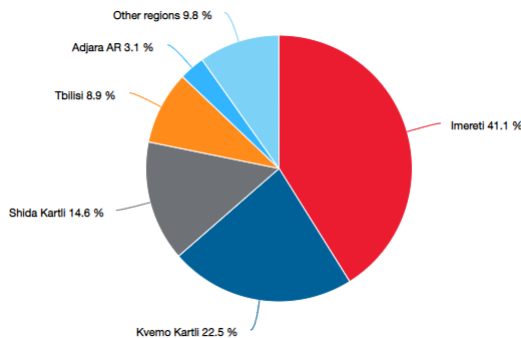
| Thematic area        | Institution                               | Environmental data and information published <sup>112</sup>   |
|----------------------|---|---|
| A. Air pollution and | National Statistics Office <sup>113</sup> | <ul style="list-style-type: none"> <li>Share of air pollution from stationary sources by country regions</li> </ul> |

<sup>111</sup> <https://eni-seis.eionet.europa.eu/east/countries/georgia>

<sup>112</sup> The titles of data and information are provided according to the data source.

<sup>113</sup> <https://www.geostat.ge/en/modules/categories/73/environment-statistics>



| Thematic area     | Institution                                    | Environmental data and information published <sup>112</sup>  |        |            |         |        |              |        |              |        |         |       |           |       |               |       |
|-------------------|--|--|--------|------------|---------|--------|--------------|--------|--------------|--------|---------|-------|-----------|-------|---------------|-------|
| ozone depletion   |  |  <table border="1"> <caption>Ozone Depletion Data by Region</caption> <thead> <tr> <th>Region</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Imereti</td> <td>41.1 %</td> </tr> <tr> <td>Kvemo Kartli</td> <td>22.5 %</td> </tr> <tr> <td>Shida Kartli</td> <td>14.6 %</td> </tr> <tr> <td>Tbilisi</td> <td>8.9 %</td> </tr> <tr> <td>Adjara AR</td> <td>3.1 %</td> </tr> <tr> <td>Other regions</td> <td>9.8 %</td> </tr> </tbody> </table>   | Region | Percentage | Imereti | 41.1 % | Kvemo Kartli | 22.5 % | Shida Kartli | 14.6 % | Tbilisi | 8.9 % | Adjara AR | 3.1 % | Other regions | 9.8 % |
|                   | Region   | Percentage   |        |            |         |        |              |        |              |        |         |       |           |       |               |       |
| Imereti           | 41.1 %   |  |        |            |         |        |              |        |              |        |         |       |           |       |               |       |
| Kvemo Kartli      | 22.5 %   |  |        |            |         |        |              |        |              |        |         |       |           |       |               |       |
| Shida Kartli      | 14.6 %   |  |        |            |         |        |              |        |              |        |         |       |           |       |               |       |
| Tbilisi           | 8.9 %  |  |        |            |         |        |              |        |              |        |         |       |           |       |               |       |
| Adjara AR         | 3.1 %  |  |        |            |         |        |              |        |              |        |         |       |           |       |               |       |
| Other regions     | 9.8 %  |  |        |            |         |        |              |        |              |        |         |       |           |       |               |       |
|                   | Environmental Information and Education Centre | <ul style="list-style-type: none"> <li>• Air quality (daily, monthly, annually)<sup>114</sup>;</li> <li>• Map of the emission of harmful substances into ambient air from stationary sources<sup>115</sup></li> </ul>  |        |            |         |        |              |        |              |        |         |       |           |       |               |       |
| B. Climate change | National Environment Agency <sup>116</sup>     | <ul style="list-style-type: none"> <li>• Current and historical hydrometeorological data on the territory of Georgia;</li> <li>• Statistical parameters of multi-year hydrometeorological data;</li> <li>• Complex climatic characteristics;</li> <li>• Construction climate services using multi-year data;</li> <li>• Determination of expected flooding areas from different floods and their zoning on the map;</li> <li>• Warnings about impending disastrous hydrometeorological events;</li> <li>• Special forecasts and warnings of avalanches (snow avalanches);</li> <li>• Design of hydro-infrastructure for marine infrastructure, forecasting of sea and riverbank dynamics;</li> <li>• Hydrological parameter measurement works;</li> <li>• Measurement work of meteorological parameters;</li> <li>• Installation and installation of meteorological and hydrological observation equipment.</li> </ul> |        |            |         |        |              |        |              |        |         |       |           |       |               |       |
| D. Biodiversity   | National Environment Agency <sup>117</sup>     | <ul style="list-style-type: none"> <li>• Evaluation of fish stocks and setting limits for fish stocks;</li> <li>• Recommendations for the development/implementation of aquaculture (including marine and ecological aquaculture);</li> <li>• Developing recommendations for the development/implementation of sustainable fisheries;</li> <li>• Analysis of fishing nets and tools;</li> <li>• Statistical analysis of fisheries;</li> </ul>  |        |            |         |        |              |        |              |        |         |       |           |       |               |       |

<sup>114</sup> [http://air.gov.ge/en/reports\\_page](http://air.gov.ge/en/reports_page)

<sup>115</sup> <http://map.emoe.gov.ge/>

<sup>116</sup> <http://nea.gov.ge/ge/service/hidrometeorologia/2/hidro-meteorologia/>

<sup>117</sup> <http://nea.gov.ge/ge/service/metevzeoba-da-akvakultura/15/momsaxurebebi/>



| Thematic area    | Institution                               | Environmental data and information published <sup>112</sup>   |
|------------------|---|---|
|                  |   | <ul style="list-style-type: none"> <li>• Research and monitoring of water biodiversity;</li> <li>• Assessment of the conservation status of hydrations;</li> <li>• Development of proposals for conservation, restoration and sustainable management of water resources.</li> </ul> |
| <b>G. Energy</b> | National Statistics Office <sup>118</sup> | <ul style="list-style-type: none"> <li>• Monthly energy statistics (electricity, natural gas, coal, oil products);</li> <li>• Consumer prices of electricity and natural gas;</li> <li>• Energy balance of Georgia.</li> </ul>  |

### 3.2.2 Environmental data sharing arrangements/agreements

Data are shared both through providing environmental information on the websites of state agencies and as a response to written requests. The types of environmental information that are available on state agency websites are defined by the Aarhus Convention.

Decree No. 219 of the Government of Georgia on “Requesting and proactively publishing public information electronically”<sup>119</sup> lists the information that should be accessible via organisations’ websites. Decree No. 01463/21 of the Auditor General of the State Audit Office on “Requesting public information in electronic form and publishing it proactively”<sup>120</sup> established the rules for requesting public information in electronic form and specified the list of public information to be proactively published. The decree does not specify the data related to the environment. However, it defines the list of information to be published by administrative bodies, including (1) general information on administrative bodies, (2) a public information page, (3) information on the staffing of an administrative body, (4) information on public procurement and privatisation of public property by an administrative body, (5) information on financing an administrative body and its cost estimate, (6) laws and (7) other public information.

Another form of data sharing is based on the formal agreement (memorandum of understanding) between the state agencies and academic sector for the exchange of data and information covering a certain period. Information is provided in an e-format (but usually not in a machine-readable format) officially to MEPA or its subordinate institutions. The environmental data are proactively shared and can be retrieved free of charge.

A memorandum of understanding between the National Statistics Office and MEPA was signed in 2014 to improve the data flows between environmental and statistical institutions and gather annual data on air, water, biodiversity, forests and violations of environmental legislation. Environmental data are provided to the National Statistics Office by MEPA and its subordinated entities, such as the National Forestry Agency and the Agency of Protected Areas. The National Statistics Office has two means of collecting environmental data:

- data collected by the National Statistics Office:
  - Survey of Water Supply Enterprises (data on water supply industry);
  - data from different sources:

<sup>118</sup> <https://www.geostat.ge/en/modules/categories/81/energy-statistics>

<sup>119</sup> <https://matsne.gov.ge/ka/document/view/2001875>

<sup>120</sup> <https://matsne.gov.ge/ka/document/view/4052709>



- agricultural statistics (Agricultural and Environment Statistics Department);
  - energy balance and transport statistics (Business Statistics Department);
  - import/export data (External Trade and Foreign Investments Statistics Department);
  - population (Population Census and Demographic Statistics Department).
- from the MEPA and its subordinate institutions:
    - data on water resources and ambient air protection (MEPA);
    - data on forest resources and their protection (National Forestry Agency);
    - data on protected areas (Agency of Protected Areas);
    - data on natural hazards (NEA).

Before being published in the statistical publication “Natural Resources and Environmental Protection in Georgia”, the data undergo quality checks (which are not publicly described).

### 3.2.3 Licencing norms

The following table describes the licences available on the main environmental portals.

Table 8. Licencing norms per portal (as of May 2020)

| Portal                                    | Licencing  |
|---|--|
| <b>Open Data Portal</b>                   | The Open Data Portal does not provide any specific licence for the use of data. However, the terms and conditions require the use of data on the website to be free and not limited. Overall, they state that the “use of data taken from the portal does not require any licence, permit or agreement”. |
| <b>Data portal by MEPA</b>                | The data portal by MEPA <sup>121</sup> proposes the Creative Common (CC) licence CC BY 4.0 for sharing all the content of the website.   |
| <b>National Statistics Office website</b> | Copyrights or licencing rules are not specified.<br>Environmental data available on the website are available free of charge and can be downloaded in machine-readable format (xlsx).  |

## 3.3 Progress so far

### 3.3.1 Main initiatives

#### Open data initiatives

As part of the OGP Action Plan of Georgia 2016–2018, the Data Exchange Agency has established an Open Data Portal – [data.gov.ge](http://data.gov.ge)<sup>122</sup>. This portal is a single web-based resource for publishing and accessing open data from the public sector. More information about the Open Data Portal is provided in Section 4.1. Portals.

Furthermore, the OGP Action Plan of Georgia 2018–2020 includes the commitment to improve the open data collection and the publishing process in the Akhaltsikhe and Kutaisi municipalities. The main objective was to enhance open data collection, processing and publication capabilities in the Akhaltsikhe and Kutaisi municipalities. Both municipalities

<sup>121</sup> <http://data.mepa.gov.ge/>

<sup>122</sup> <http://www.data.gov.ge/Home>



developed the Open Data Action Plans (2019–2020) and the monitoring frameworks on how to facilitate open data collection, processing and regular publication<sup>123</sup>.

#### **Development of an environment portal<sup>124</sup>**

To fulfil the commitment provided in the OGP Action Plan of Georgia 2016–2018 (Commitment #16), the Parliament of Georgia on 1 June 2017 adopted an Environmental Assessment Code. Since the code establishes new decision-making rules, MEPA's purpose is to change approaches and practices to find a technical instrument for the full-value introduction of new requirements.

In that context, EIEC and MEPA are now jointly developing a new environmental portal – the Environmental Information and Knowledge Management System<sup>125</sup>. Currently, different data and information are placed in the biodiversity, climate change and desertification modules. Both the web-based platform and the portal are in testing mode and are expected to be fully operational by the end of 2020. The further development of the system through the introduction of other areas (waste, water etc.) is planned for 2021<sup>126</sup>.

#### **Launch of the Ambient Air Quality Portal**

As part of the EU-Georgia Association Agreement and the commitment to improving air quality and sharing of air information, Georgia launched a new Ambient Air Quality Portal<sup>127</sup>. It provides full access to the air monitoring data conducted by NEA. The portal is maintained by the EIEC. This is the first attempt by an EaP country to exchange data with the EU/EEA and to integrate data into a single European information system. More information about the Ambient Air Quality Portal is provided in Section 4.1. Portals.

#### **Introduction of the Electronic Licencing System in the field of natural resources application<sup>128</sup>**

Throughout this project, the NEA will issue licences and render other paid services entirely electronically. The new electronic system will allow for documents on the licencing to be made available electronically. As a result, the agency will be able to sort and form an electronic statistical database of collected information. The system will ensure the prompt, high-quality delivery of the processed information. Furthermore, the customer will have simplified access to any public information (statistics, online resource maps, guidebooks, etc.) available in the licencing field, and the licensees will be able to find and share information.

On 20 February 2018, the agency launched a new portal on the Revenue Service webpage<sup>129</sup> which allows licence-seekers to register their interest in participating in auctions and to submit all necessary documents to the agency electronically, including licence implementation action plans and relevant statistics. The portal also allows the agency to send out notifications to all registered licence-seekers or licensees. The new electronic licencing system requires the entry of a username and password for registration, which must be obtained at the agency.

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<sup>123</sup> <https://www.opengovpartnership.org/members/georgia/commitments/GE0082/>

<sup>124</sup> <https://www.opengovpartnership.org/members/georgia/commitments/GE0070/>

<sup>125</sup> <https://eims.eiec.gov.ge/>, the system is currently not active as assessed in May 2020

<sup>126</sup> Third National Action Programme of Georgia 2017-2021: <https://mepa.gov.ge/En/PublicInformation/66>

<sup>127</sup> <http://air.gov.ge/en/>

<sup>128</sup> [https://www.opengovpartnership.org/sites/default/files/Georgia\\_End-term\\_Self-Assessment\\_2016-2018\\_EN.pdf](https://www.opengovpartnership.org/sites/default/files/Georgia_End-term_Self-Assessment_2016-2018_EN.pdf)

<sup>129</sup> <https://nam.rs.ge>





### Spatial data initiatives

In 2013 Georgia initiated a project related to NSDI to support the development of common geo-information policies across the country, establish national standards on geospatial data and metadata and ensure data connectivity and interoperability.

Currently, Georgia has a geoportal<sup>130</sup> in the testing phase. However, information about the portal's implementation is not publicly available.

### Water Information System of Georgia (WIS Georgia)<sup>131</sup>

Georgia has developed a water information system with the technical and financial support of the ENI SEIS II East project. The national information system was designed by replicating the concept of the Water Information System for Europe (WISE).

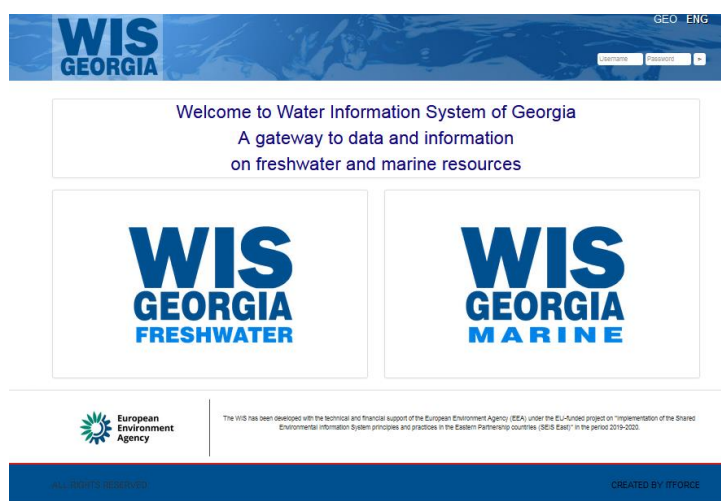


Figure 6. National Water Information System of Georgia (WIS Georgia) (as of May 2020)

The system provides a single-entry point to data and information dissemination on the website. WIS Georgia provides access to a number of reports and strategic documents in relation to the country's national water policy. In addition, it will serve as a common platform among water agencies to exchange monitoring data and information. An interactive map viewer offers rich data and information on the country's water resources.

Technically, the system enables the improvement of the implementation of the SEIS principles across its three pillars:

- Content/data: raw and derived datasets, as well as the output/dissemination products (e.g. reports), are stored in the system. To ensure interoperability, a standard data dictionary is introduced.
- Cooperation: the content management system is maintained by the NEA as a data repository institute, while the EIEC hosts the website.
- Infrastructure: the technical part of WIS Georgia – hardware and software (computer, database, files, web portal platform) support of this dataflow is maintained by EIEC.

<sup>130</sup> Geoportal.gov.ge

<sup>131</sup> Based on the presentation by Maia Javakhishvili during the 4th ENI SEIS II East Project Steering Committee Meeting on 12 November 2019 in Copenhagen. Presentations are available here : <https://eni-seis.eionet.europa.eu/east/areas-of-work/communication/events/project-related-events/4th-eni-seis-ii-east-project-steering-committee-meeting>



The portal is being handed over to the Georgian governmental institutions for official use in mid-2020.

### Public Information Database

The Public Information Database<sup>132</sup> has been implemented by the Institute for Development of Freedom of Information (IDFI) since 2010. In 2014, with the support of the Open Society Georgia Foundation (OSGF), four Georgian NGOs worked on transparency and accountability issues: the Institute for Development of Freedom of Information (IDFI), Transparency International Georgia (TIG), Georgian Young Lawyers Association (GYLA) and Green Alternative (GA). These organisations have joined forces for the development of a comprehensive database of public information.

NGOs send official requests to governmental institutions and publish information received on the portal. The portal also provides statistical information on how the institutions comply with obligations to provide public information. Data are available for download in Georgian only. The information on the portal has not been updated since 2017. If further developed, this initiative could provide additional valuable information for public use.

### 3.3.2 International rankings

International rankings are important, as they assess progress made against other countries based on internationally acknowledged methodologies.

#### E-government Development Index (EGDI)<sup>133</sup>

As a composite index, the EGDI is used to measure the readiness and capacity of national institutions to use ICT to deliver public services. Its components include the Online Service Index (OSI), Telecommunication Infrastructure Index (TII) and Human Capital Index (HCI).

In 2018, Georgia scored 0.6893 and was ranked 60<sup>th</sup> out of 193 countries. Compared to the EaP countries, Georgia is slightly above the average. The gap with the average among EU countries is becoming smaller.

The figure below shows the change of EGDI throughout the period 2012–2018.

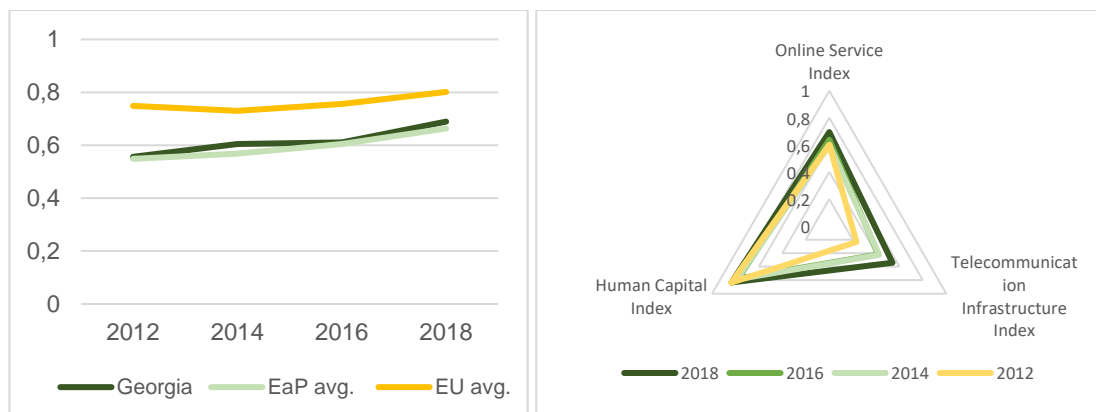


Figure 7. EGD I of Georgia (2012–2018) (developed by the report’s authors based on EGD I data)

<sup>132</sup> [opendata.ge](https://opendata.ge)

<sup>133</sup> <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/64-Georgia-Country/dataYear/2018>



Georgia has made significant progress in terms of broadband infrastructure and telecommunication. That progress is translated in the International Telecommunication Union country profile of Georgia, which shows that the number of broadband subscriptions more than quadrupled over the last six years (now 80 % of homes have access to the internet).

### Open Data Barometer<sup>134</sup>

The Open Data Barometer is produced by the World Wide Web Foundation with the support of the Omidyar Network. The Open Data Barometer aims to uncover the readiness, implementation status and impact of open data initiatives around the world. It analyses global trends and provides comparative data on governments and regions using an in-depth methodology that combines contextual data, technical assessments and secondary indicators.

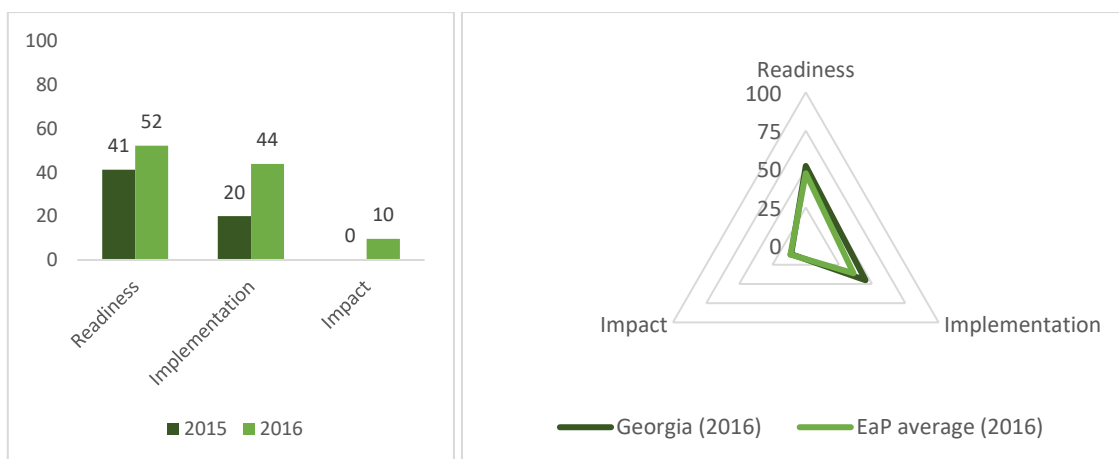


Figure 8. Open Data Barometer statistics (2015-2016) (developed by the report's authors based on Open Data Barometer data)

In terms of open data, the Open Data Barometer evaluation of Georgia is slightly lower than the EaP countries' average.

The following table provides more details about the Open Data Barometer assessment in terms of environmental data (or related).

Table 9. Open Data Barometer environmental evaluation (status 2016 with progress evaluation based on 2020 findings, developed by the report's authors)

|                       | Environmental data |      | Cartography |      |
|-----------------------|--------------------|------|-------------|------|
|                       | 2016               | 2020 | 2016        | 2020 |
| Data exists           | ●                  | ↑    | ●           | ↑    |
| Online availability   | ●                  | ↑    | ●           | ↑    |
| Machine-readable      | ●                  | ●    | ●           | ●    |
| Reusable data         | ●                  | ●    | ●           | ●    |
| Free of charge        | ●                  | ↑    | ●           | ↑    |
| Open licence          | ●                  | ●    | ●           | ●    |
| Data validity         | ●                  | ↑    | ●           | ●    |
| Data update           | ●                  | ●    | ●           | ↑    |
| Data discovery rating | ●                  | ●    | ●           | ↑    |
| Metadata              | ●                  | ●    | ●           | ↑    |

<sup>134</sup> [https://opendatabarometer.org/4thedition/detail-country/?\\_year=2016&indicator=ODB&detail=GEO](https://opendatabarometer.org/4thedition/detail-country/?_year=2016&indicator=ODB&detail=GEO)



Note: During the period of preparation of the report an updated information about the open data was captured, which showed progress in specific areas. Therefore, the columns in the table above represent:

- 2016 - Open Data Barometer environmental evaluation;
- 2020 – the progress evaluation based on the report findings mainly related to the recent developments of the open data and spatial data initiative as well as environment thematic portals.

● - Yes, ● - No, ● - Partly ▲ - improvement in the area, ● - no significant changes in the area.

According to the Open Data Barometer assessment, environmental data, even though available for interested parties, lack timely updates and do not show validity periods, and related metadata are not available. This assessment also evaluated geographic data (cartography) negatively. Additionally, it reflected the absence of environmental information on the geoportal. The Open Data Barometer does not evaluate the presence of environmental data according to specific standards.

Consequently, it is necessary for Georgia to adopt a metadata standard for the publication of information on the Open Data Portal and to refine the standard to accommodate the specificities of health, geographic and environmental data. This is already being carried out in terms of spatial data as Georgia is already implementing the INSPIRE Directive's requirements.

### Global Open Data Index <sup>135</sup>

The Global Open Data Index is the annual global benchmark for publication of open government data, run by the Open Knowledge Network. The survey is designed to assess the openness of specific government datasets according to the Open Definition. The survey assesses 16 different areas, including the government budget, spending and procurement, access to information about land ownership, election results at all levels and national statistics.

The Global Open Data Index assessment was performed in 2013-2016 (the Index is not updated since) but it did not include the assessment of Georgia.

### Open Data Inventory (ODIN)<sup>136</sup>

The ODIN assesses the coverage and openness of official statistics. It helps to identify gaps, promote open data policies, improve access and encourage dialogue between national statistics offices (NSOs) and data users.

Georgia ranked 38<sup>th</sup> in the ODIN for 2018 with an overall score of 58%. The overall score was a combination of a data coverage sub-score of 57% and a data openness sub-score of 59%. Georgia's scores were higher than the regional average across all three major data categories. Within the country, the highest levels of coverage and openness are on economic information and the lowest levels are on environmental information. In particular, the environmental coverage sub-score is 61% and the openness sub-score is 40%. More information is provided in the following figure.

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<sup>135</sup> <https://index.okfn.org/>

<sup>136</sup> <http://odin.opendatawatch.com/Report/countryProfile/GEO?appConfigId=4>



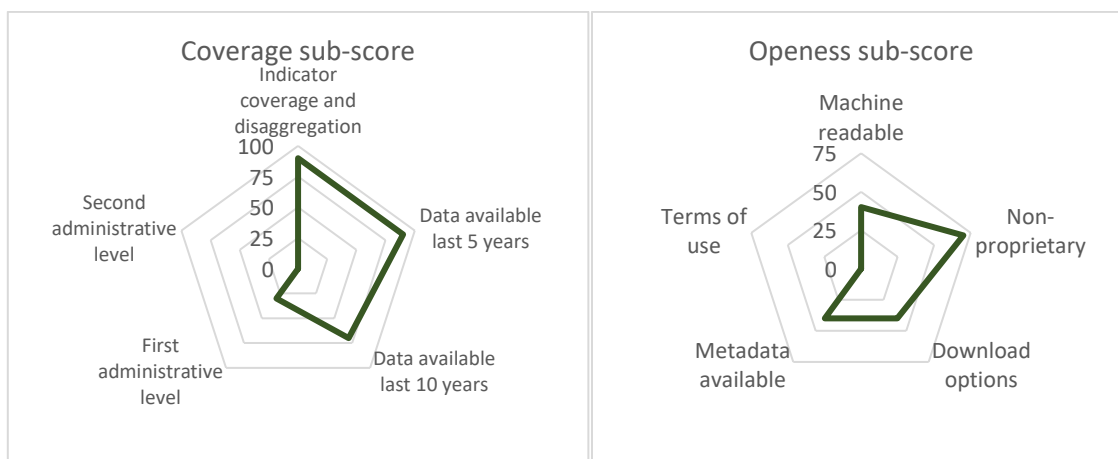


Figure 9. Coverage sub-score and openness sub-score of environmental statistics (2018, based on ODIN data)

The ODIN evaluation points out the same conclusion as this report: the need to adopt a metadata standard based on international best practices, enhance data and metadata interoperability, and update licencing terms and conditions to promote open data access.

#### Environmental Performance Index (EPI)<sup>137</sup>

The EPI ranks countries on 24 performance indicators across 10 issue categories covering environmental health and ecosystem vitality. These metrics provide a gauge at a national scale of how close countries are to established environmental policy goals.

In 2018, Georgia ranked 94<sup>th</sup> out of 180 countries with a score of 55.69 out of 100. The figure below shows the main sub-indicators of the EPI, with light-green colours indicating a rating for the entire category.

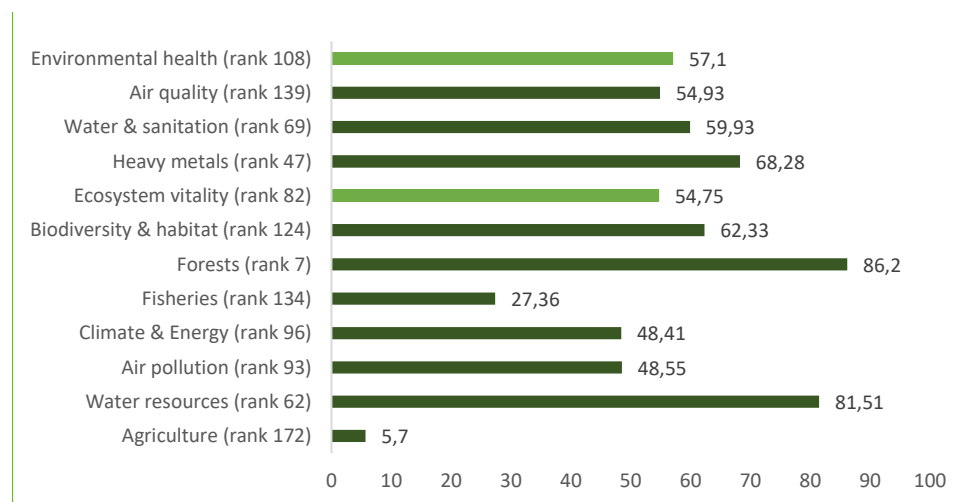


Figure 10. Indicators of Georgia's EPI (2018, <https://epi.envirocenter.yale.edu/epi-country-report/GEO>)

<sup>137</sup> <https://epi.envirocenter.yale.edu/epi-country-report/GEO>

### 3.3.3 ICT related statistics

The communications sub-sector is relatively mature. It has six mobile phone and mobile internet service providers, 17 large internet service providers and 118 smaller internet service providers, 15 large television broadcasters and 57 smaller television broadcasters, and six large radio broadcasters and 32 smaller radio broadcasters.<sup>138</sup>

According to the International Telecommunication Union<sup>139</sup>, Georgia had at the end of 2018:

- fixed-telephone subscriptions per 100 inhabitants: 14.5
- mobile-cellular subscriptions per 100 inhabitants: 130.4
- fixed (wired)-broadband subscriptions per 100 inhabitants: 20.1
- mobile-broadband subscriptions per 100 inhabitants: 45.3
- households with a computer (%): 62.1
- households with internet access at home (%): 69.5
- individuals using the internet (%): 64

The Data Exchange Agency provided the following statistics regarding internet access and the usability of e-services.

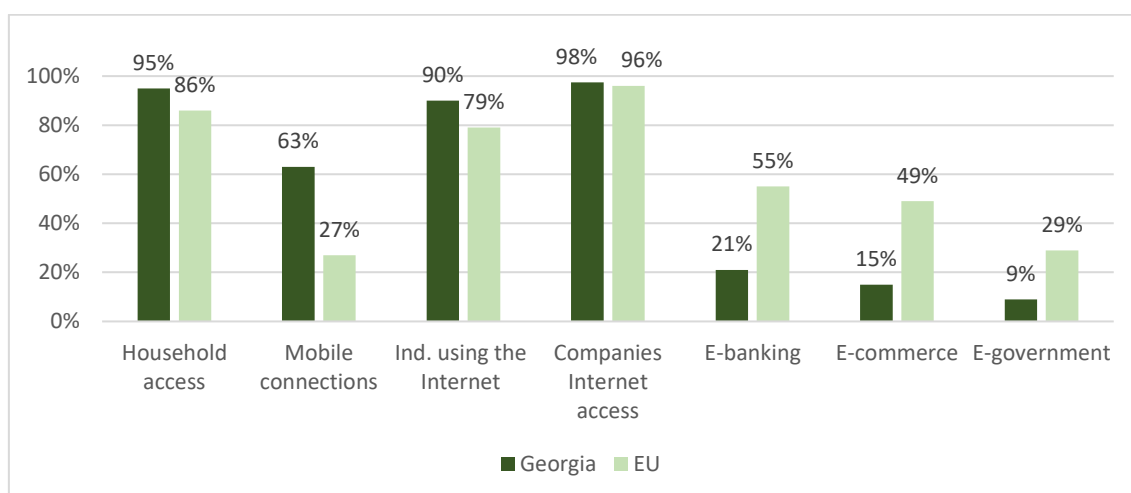


Figure 11. Internet access and usability of e-services (2019<sup>140</sup>)

<sup>138</sup> Georgian ICT Cluster Potential, Strengths, Weaknesses and Internationalisation Opportunities, 2017. Link: <http://www.eu4business.eu/files/medias/study-ict.pdf>

<sup>139</sup> <https://www.itu.int/net4/itu-d/icteye/CountryProfile.aspx>

<sup>140</sup> Development Path of Digital Georgia from e-Governance Frameworks to eGovernment initiatives, presented by the representative of Data Exchange Agency during the national roundtable in Tbilisi on 13 June 2019.



## 4 Technology enablers for environmental information sharing

### 4.1 Portals

This section provides insights on the platforms available for the publication of environmental data and information at a national and international level.

#### 4.1.1 Open Data Portal

As part of the OGP Action Plan of Georgia 2016–2018 approved by the government in 2015, the Data Exchange Agency has established an Open Data Portal<sup>141</sup>. The portal is a unified national platform for publishing open data owned by government institutions, allowing any interested person, group or entity to process, use and reuse these data for various purposes. Data are available free of charge and can be reused without limitation, but requires the acknowledgement of the Open Data Portal as a source. The portal is only available in the Georgian language and the usability is good. The application programming interface (API) for data harvesting from the portal is not described, and neither is the metadata standard.

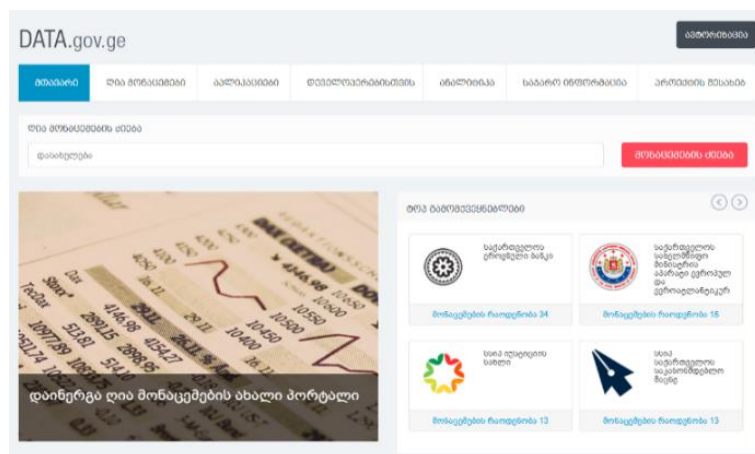


Figure 12. The Georgian Open Data Portal (as of May 2020)

#### 4.1.2 E-government portal

The e-service portal of Georgia is my.gov.ge<sup>142</sup>. It provides a number of online services that include identification document services, environmental property services, social services, health care or business initiatives, and payment of fines and utility fees. People can also use the portal to request public information from public bodies.

<sup>141</sup> <http://www.data.gov.ge/Home>

<sup>142</sup> <https://www.my.gov.ge/ka-ge/services>

It is important to note that statistical information can also be requested through the portal. Information from 52 public bodies and 408 departments or other legal bodies of public institutions can be requested.

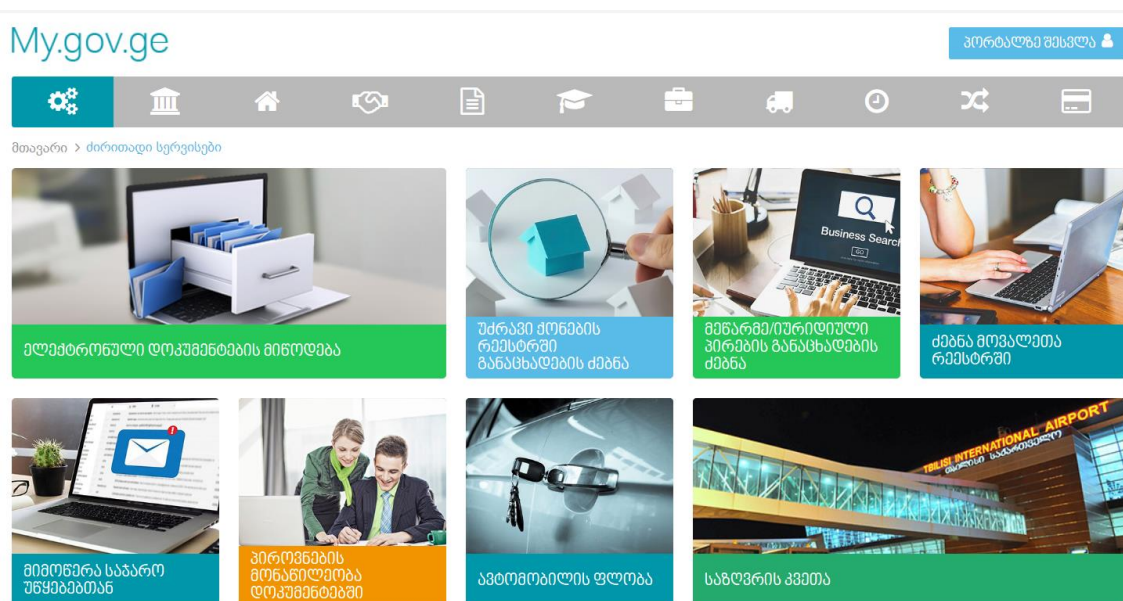


Figure 13. Georgia’s e-services portal (as of May 2020)

The portal is available in the Georgian language only.

The following additional points regarding the use of Georgia’s e-services portal were provided by the Data Exchange Agency at the roundtable on 13 June 2019:

- 2.7 million citizens with eID (eID cardholders have access to all e-services, can register a business online as well as sign documents with a digital signature);
- online transactions increased (e.g. e-auction portal has 7 500 visitors daily);
- 22.6% of businesses accessed public agency portals for e-services in 2016;
- the e-service portal was used by more than 100 000 physical users and by more than 1 500 legal entities in 2018.

#### 4.1.3 Environmental portals

The following table summarises the main environmental information platforms and portals.

Table 10. Main environmental information platforms and portals managed by national institutions (as of May 2020)

| Platform/ portal   | Description   |
|--|---|
| <b>MEPA website</b><br><a href="http://mepa.gov.ge">http://mepa.gov.ge</a> | <p>The website provides reports on the state of the environment, strategic documents, laws, environmental impact assessments, information on public hearings, environmental decisions and air pollution monitoring data.</p> <p>The website is bilingual, and some reports are available in both Georgian and English. The reports are mostly available in pdf (but sometimes in docx format).</p> <p>Information and reports can be freely downloaded. The licencing terms</p> |



| Platform/ portal  | Description  |
|---|--|
|   | <p>of the information on the website are not specified.</p> <p>The portal still needs improvement in terms of accessibility and multilingual support.</p>  |
| <p><b>Data portal by MEPA</b><br/> <a href="http://data.mepa.gov.ge/">http://data.mepa.gov.ge/</a></p>                        | <p>The data portal by MEPA is part of the Georgian Forest and Land Use Atlas, which allows data to be downloaded. It covers data from different categories, including land use, land cover, biodiversity, hazard levels and protected areas. Data are presented by various organisations, including the National Forest Agency, the Agency for Protected Areas, the Department of Biodiversity and Forestry, and NGOs. Data can be searched by category or organisation.</p> <p>The data are available in map layers in GIS or as a pdf. Thus, the reusability of data differs.</p> <p>The website is available in Georgian, thus opportunities for international access and usage are limited.</p> <p>The data portal by MEPA uses the CC BY 4.0 license for sharing all the website's content.</p>   |
| <p><b>Environmental Information and Education Centre website</b><br/> <a href="http://eiec.gov.ge">http://eiec.gov.ge</a></p> | <p>The website is managed by the EIEC. The web page of the EIEC provides information on environmental themes, projects, legislation, strategic documents, guidelines and other information. It also contains the texts of multilateral environmental agreements (MEAs) and national reports on the implementation of the provisions of MEAs, national reports on the state of the environment, a registry of environmental organisations as well as infographics. The site also includes information about issued permits and other related information.</p> <p>The website has 18 environmental themes<sup>143</sup> (biodiversity, climate change, land, water, air, environmental education, etc.). The information is grouped into the following subsections: data, documents and projects (none of the areas provide near real-time data).</p> <p>The portal's content is protected by copyright.</p> |
| <p><b>Air Quality Portal</b><br/> <a href="http://air.gov.ge">http://air.gov.ge</a></p>                                       | <p>The portal is maintained by the EIEC. It provides access to comprehensive information on the ambient air quality and monitoring data via an interactive map using Geographic Information System (GIS) technologies. The portal also provides metadata to support GIS information.</p> <p>Also, there are functionalities to provide data in near real-time; however, the data were last updated in November 2019<sup>144</sup>. The results of the indicative measurements are also presented on the portal. The website is in Georgian and English. It is a good example of an easy-to-use environmental data portal.</p> <p>The portal's content is protected by copyright.</p>   |
| <p><b>Environmental Information and</b></p>   | <p>The website is maintained by EIEC. It is intended to provide data and information on biodiversity protection, climate change and land,</p>  |

<sup>143</sup> As described on the website: <http://eiec.gov.ge>

<sup>144</sup> As accessed in May 2020.



| Platform/ portal   | Description   |
|--|---|
| <b>Knowledge Management Portal</b><br><a href="https://eims.eiec.gov.ge">https://eims.eiec.gov.ge</a>    | structured under the reports, data, projects and GIS sections. The data are intended to be downloaded in pdf and xls formats. The portal is not accessible at the time of preparing this report <sup>145</sup> .  |
| <b>National Environment Agency website</b><br><a href="http://nea.gov.ge">http://nea.gov.ge</a>          | <p>The website <a href="http://nea.gov.ge">nea.gov.ge</a> is maintained by the NEA. The information is grouped into the following areas: hydrometeorology, environmental pollution, geology, air pollution monitoring, fisheries and the Black Sea.</p> <p>Environmental data are organised into bulletins that can be downloaded in pdf format (non-machine-readable). The services of the agency are listed under almost all topics.</p> <p>The website is bilingual, and some reports are available in both Georgian and English; however, the amount of content provided in English is limited.</p> <p>Information and reports can be freely downloaded. However, the portal's content is protected by copyright.</p> <p>The portal still needs improvement in terms of accessibility and multilingual support.</p> |
| <b>METEO.GOV.GE</b><br><a href="http://meteo.gov.ge">http://meteo.gov.ge</a>                             | <p>This website is managed by NEA. It provides weather forecasts, hydrological data, data related to natural disasters, avalanche danger, environmental pollution (radiation) and an interactive map to reflect this information. The website is available in both Georgian and English. It is a good example of a functional, bilingual portal.</p> <p>The portal's content is protected by copyright.</p>   |
| <b>National Statistics Office website</b><br><a href="https://www.geostat.ge">https://www.geostat.ge</a> | <p>Annual national environmental reports and environmental data are published consistently on the National Statistics Office website. The reports published on this website are not published on other websites (unlike some other reports). Information is collected from the MEPA, which consolidates data and transmits them to the National Statistics Office.</p> <p>The portal is available in Georgian and English. It is user-friendly; however, the usability could still be improved by following the international standards and examples of good practices.</p> <p>The licencing terms of the information on the website are not specified.</p>   |
| <b>Agency of Protected Areas website</b><br><a href="http://apa.gov.ge">http://apa.gov.ge</a>            | <p>The website provides information on the number and categories of protected areas in Georgia and a list of territorial administrative units. The information provided uses GIS technology.</p> <p>The section on biodiversity gives general descriptive information on the biodiversity and habitats of the protected areas of Georgia; this information cannot be downloaded. The laws that define the framework for the establishment and management of the Protected Areas in Georgia are also available on the website (only in Georgian) and can be downloaded. Data on ecotourism can be found under the ecotourism section. The website also has an interactive map showing</p>  |

<sup>145</sup> As accessed in May 2020



| Platform/ portal  | Description  |
|---|--|
|   | <p>the protected areas of Georgia.</p> <p>The portal's content is protected by copyright.</p>  |
| <p><b>GIS portal of MEPA</b></p> <p><a href="https://gis.mepa.gov.ge/portal/home/">https://gis.mepa.gov.ge/portal/home/</a></p> | <p>The "Forest and Land Use Information and Decision Support System" (FLUIDS) aims to support the decision-making process through the dissemination of environmental information in forest and forest landscape areas. It allows the public to construct and analyse various layers of GIS information regarding forests, biodiversity and land use. New GIS layers created by the public can be published for reuse. Data can be viewed on the map in the browser or using specific software, e.g. ArcGIS Desktop. Data are described by metadata in accordance with the ISO 19139 standard.<sup>146</sup></p>                                      |
| <p><b>The Forest and Land Use Atlas of MEPA</b></p> <p><a href="https://atlas.mepa.gov.ge/">https://atlas.mepa.gov.ge/</a></p>  | <p>The Forest and Land Use Atlas is an online monitoring platform that provides analysis tools and information related to forest and land use in Georgia. By using the latest forest monitoring technology, the users can view and analyse up-to-date data sets at both national and local levels. The Atlas is managed by MEPA, with support from the World Resources Institute (WRI), and combines data from MEPA and non-governmental organisations (NGOs) with global data from the WRI Global Forest Watch (GFW) platform.</p> <p>The website uses the CC BY 4.0 license for sharing all of the website's content, unless stated otherwise.</p> |

In short, Georgia has developed numerous portals that sometimes appear to have overlapping content. The portals are well developed for specific areas such as forestry, land use and air quality. The EIEC website (<http://eiec.gov.ge>) provides access to numerous reports on different environmental areas, for example, land, water, air and environmental education. It is recommended that duplicating the same data and information on multiple sources be avoided and an integrated single point of access be provided.

## 4.2 Environment open data availability and reuse

The table below presents a comparison of the Open Data Portal and the website of the National Statistics Office in terms of data availability and reusability.

Table 11. Comparison of the Open Data Portal and the website of the National Statistics Office (as of May 2020)

|   | Open Data Portal  | Website of the National Statistics Office   |
|---|---|---|
| <p><b>Statistics referring to the availability of environmental data online</b></p> | <p>Currently, there are 173 datasets published, which include eight datasets on environmental protection, three datasets on geographic data and eight datasets on agriculture<sup>147</sup>.</p> <p>The number of datasets is very low compared to other countries,</p> | <p>The National Statistics Office publishes aggregated annual reports, statistical data and environmental indicators.</p> <p>In total, data for 16 UNECE environmental indicators are available.</p> <p>Other environmental data are published as figures/diagrams and as XLSX files for download. Hence, there is no functionality</p> |

<sup>146</sup> As of May 2020, the portal was not accessible.

<sup>147</sup> As evaluated in May 2020.



|                            | Open Data Portal  | Website of the National Statistics Office   |
|----------------------------|---|---|
|                            | including those of the EaP region. Compared to Europe, for example France, there are around 2 000 datasets in the fields of sustainable development, energy and housing. Consequently, Georgia is required to take measures to foster both supply and demand for open data.   | for analysing the data. All information is provided in Georgian and English.  |
| <b>Reusability of data</b> | All datasets on the Open Data Portal ( <a href="http://data.gov.ge/">http://data.gov.ge/</a> ) are available in CSV or XML formats and thus are machine-readable. At the moment, there are very few datasets published. For each dataset, it is possible to provide feedback. Lastly, no translations are available for the metadata of the dataset. This could undermine international cooperation and/or reuse of data. | The National Statistics Office has published 16 UNECE environmental indicators. These indicators are all available in machine-readable format (XLSX). |

In short, Georgia needs to continue working on the publication of open data (availability), licencing policies, the usability of the Open Data Portal and the multilingual aspects of the portal in order to increase the usage of open data.






## 5 Achieving a high level of maturity for environmental information management

### 5.1 Main challenges

#### 5.1.1 E-government

The main challenges related to e-government in Georgia are presented in the table below and are structured according to SEIS pillars: content, infrastructure and cooperation (network).


Table 12. Major challenges related to e-governance

|  |  |
|--|--|
| <p><b>Content</b></p>           | <ul style="list-style-type: none"> <li>• <b>A relatively low level of e-services provision and use.</b> This leads to low adaptability to the needs of individual users comparatively to the EU average (as shown by EGDI in Section 3.2.2 International rankings).</li> <li>• <b>Lack of aligned/regulated business processes/administrative procedures in the public administration.</b> Without having clear processes, it is difficult to establish and develop e-services.</li> <li>• <b>Need to develop a new e-government strategy.</b> The PAR Roadmap 2020 covers objectives until 2020, thus the achievement of the objectives should be evaluated, and a new e-government strategy should be prepared and adopted.</li> </ul> |
| <p><b>Infrastructure</b></p>  | <ul style="list-style-type: none"> <li>• <b>Poor multilingual support.</b> The absence of (good) translation on most government websites hinders international access and usability.</li> <li>• <b>Lack of systematic coordination</b> and/or the possibility to use common software and hardware resources limits the unification of e-government solutions.</li> <li>• <b>Need to adopt and implement interoperability standards.</b> Many public administrations still have difficulties in exchanging data due to a lack of common standards and metadata.</li> </ul>  |
| <p><b>Cooperation</b></p>     | <ul style="list-style-type: none"> <li>• <b>Reluctance to implement e-services and resistance towards change.</b> Georgian public institutions and public servants find e-government initiatives difficult to implement as they do not expect a high usage of e-services. This may be illustrated by HCI, which has shown little progress in the last six years (Section 3.2.2 International rankings).</li> </ul>   |

## 5.1.2 Open data

The major challenges related to electronic access to information and open data are presented in the table below, structured along the SEIS pillars.

Table 13. Major challenges related to open data

|  |  |
|--|--|
| <p><b>Content</b></p>           | <ul style="list-style-type: none"> <li>• <b>Lack of legislative base.</b> In Georgia, there is no specific legislation to regulate open data activities. It is considered a major problem related to open data by the Institute for Development of Freedom<sup>148</sup>. Without coherent legislation in this field, institutions may be reluctant to publish data.</li> <li>• <b>Absence of clear licencing on the Open Data Portal.</b> Without a clear licencing framework, it may be complicated for the public to legally use data for both commercial and non-commercial purposes.</li> <li>• <b>Lack of datasets available online:</b> Currently, few datasets are published on the Open Data Portal. It is necessary to undertake measures to promote the obligation to make information available online, thus driving the supply of open data.</li> <li>• <b>Lack of harmonisation of national metadata standards.</b> Georgia developed its own standard for open data; however, it is not compatible with international ones. Thus, the international exchange of data and cooperation is limited.</li> <li>• <b>Poor multilingual support.</b> The absence of good translation of the Open Data Portal and most government websites leads to poor international access, use and reuse of information.</li> </ul> |
| <p><b>Infrastructure</b></p>  | <ul style="list-style-type: none"> <li>• <b>Lack of a common set of classifiers.</b> This aspect adds to the challenges of standardising the pool of public information held outside information systems and databases.</li> <li>• <b>Unclear API for retrieving public information.</b> The lack of well-described APIs on the Open Data Portal jeopardises the economic potential of open data. For example, entrepreneurs can have difficulties in creating an application if they do not have access to open datasets.</li> </ul>  |
| <p><b>Cooperation</b></p>     | <ul style="list-style-type: none"> <li>• <b>Lack of awareness among public institutions on the need for and benefits of information sharing.</b> Government employees lack knowledge about open data, its benefits and possible use. Thus, they are reluctant to provide access to information and datasets.</li> <li>• <b>Lack of skills for the preparation and publication of open data.</b> Even where there is awareness about open data among public institutions, they often lack the digital skills to successfully publish data.</li> <li>• <b>Lack of initiatives to reuse open data.</b> There is still a lack of awareness among the public and private sectors to start developing an open data “economy”.</li> </ul>   |



<sup>148</sup> [https://idfi.ge/en/access\\_to\\_open\\_data\\_ing\\_georgia\\_and\\_visegrad\\_countries](https://idfi.ge/en/access_to_open_data_ing_georgia_and_visegrad_countries)



### 5.1.3 Environmental information sharing

The main challenges related to environmental information management are presented in the table below, structured along the SEIS pillars.

Table 14. Major challenges related to environmental information management

|  |   |
|--|---|
| <p><b>Content</b></p>         | <ul style="list-style-type: none"> <li>• <b>Need for a dedicated legal framework for data exchange.</b> Without establishing data exchange protocols/mechanisms between the state authorities and clear institutional mandates for environmental information management and sharing, it is difficult to ensure a regular and systematic exchange.</li> <li>• <b>Lack of metadata for environmental information.</b> At present, only the filename or a short title is available for describing environmental information. As such, it is difficult for users to assess the relevance and accuracy of the documents/data published.</li> </ul>   |
| <p><b>Infrastructure</b></p>  | <ul style="list-style-type: none"> <li>• <b>Fragmentation of platforms for the publication of environmental information.</b> At the moment, there are multiple platforms on which environmental information can be found. This situation leads to the fragmentation of environmental information, inaccuracies in data, duplications and confusion for users when searching for primary data sources. In addition, it is difficult to ensure the interoperability of the portals publishing environmental information.</li> <li>• <b>Lack of an integrated, comprehensive and efficient environmental information system.</b> An information system would allow the systematisation and linking of all data regarding environmental components, hence strengthening the information exchange between different institutions holding this information.</li> <li>• <b>Lack of a single web access point.</b> At the time of preparing this report<sup>149</sup>, there is no single web access point for environmental data and information with spatial attributes – multiple portals publish environmental data with geographic data (e.g. the air quality portal, WIS Georgia).</li> <li>• <b>Lack of licencing framework for environmental data.</b> At the moment, the portals where environmental data and information are published often do not have any licence specified for the use and reuse of data and information. Also, due to the lack of a licencing framework, discrepancies of usage of data and information could appear in the future.</li> </ul> |
| <p><b>Cooperation</b></p>   | <ul style="list-style-type: none"> <li>• <b>Weak cooperation between various environmental information holders.</b> Even though there are a lot of institutions involved in the provision of environmental information, cooperation and sharing between them is still poor.</li> <li>• <b>Unclear responsibilities for environmental information management.</b> Potential overlaps in mandates and a lack of clear delineation between the responsibilities of various institutions managing environmental information lead to insufficient efficiency, effectiveness and transparency of central and local governments.</li> </ul>  |

<sup>149</sup> December 2019 – May 2020

## 5.2 Roadmap<sup>150</sup>

In general, it is recommended that Georgia should focus on some key elements for ensuring coherent and effective open data and environmental information management and for addressing the common challenges presented above. In brief, the focus should be on the following:

- **Policy measures:**
  - *Long-term digital action plan:* an action plan for e-government and open data should be in place. It should ensure scoping, management and funding of the national e-government and open data portals, as well as digital awareness-raising activities for both governmental institutions and the public. In doing so, all available results and good practices acquired from previous activities and projects across the whole economy spectrum should be assessed and put in motion.
  - *General interoperability framework:* the country should have in place an interoperability framework or at least its foundation. This is especially required for building an integrated environmental information system(s) and ensuring the smooth integration/exchange/sharing of environmental data.
  - *Roadmap in the field of open data and environmental information:* this roadmap should contain key objectives for fostering sharing and dissemination of environmental information.
- **Legal measures:**
  - *Enforcement mechanisms* for the regular collection, sharing and dissemination of environmental information and for monitoring implementation.
- **Technical measures:**
  - *E-government, open data and geo-portals:* the country should have effective e-government, open data and environmental portals on which environmental data and information can be shared/disseminated with spatial attributes, and where services can be built.
  - *Implementation of international standards:* standards developed by the EU, the International Organisation for Standardisation (ISO), the World Meteorological Organisation, the Open Geospatial Consortium, the World Wide Web Consortium, the National Institute of Standards and Technology and other international organisations which are responsible for standards development could be adjusted and introduced in the areas of designing an information system, metadata standards and interoperability standards.

Some of these elements are already in place in Georgia (e.g. the Open Data Portal) and other portals containing environmental data and information. Nonetheless, it is advised to look at these aspects from an integrated perspective of environmental information sharing and dissemination and to update them where appropriate. These elements are under continuous development; hence a periodic review is necessary.

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<sup>150</sup> The proposed roadmap has been updated taking into consideration the presentation made during the 4th ENI SEIS II East Project Steering Committee Meeting on 12 November 2019 in Copenhagen. Presentations are available here: <https://eni-seis.eionet.europa.eu/east/areas-of-work/communication/events/project-related-events/4th-eni-seis-ii-east-project-steering-committee-meeting>





### Guidance for the implementation of the roadmap

The roadmap provided in the following section outlines key areas for further development in the field of open data and environmental information. It also provides recommendations and suggested actions for improvement that are organised according to the following SEIS pillars: content, infrastructure and cooperation.

The success and rapid advancement of the country in this challenging domain is strongly dependent on clear prioritisation, multi-disciplinary teamwork and regular monitoring and adjustment of results. Furthermore, as progress is gradually made in one or several areas proposed for consideration, improvements, readjustments or amendments to the roadmap will be needed to keep it relevant and focused on the key priorities of the country.

To support the implementation process of the proposed measures at the national level, it is recommended to start by establishing an interdisciplinary team that would be responsible for driving and overseeing the overall process. The measures should be prioritised and implemented to support and enhance the e-government, open data and environment strategies of the country. Furthermore, this process should not be carried out in isolation. On the contrary, it should also be undertaken by taking into account the extensive experience already gained in this area by other countries and organisations and in the context of broad regional exchange and international collaboration.

The proposed measures are to be implemented by specific bodies at various levels of decision-making and across disciplines. In this respect, the measures are grouped in three major categories, namely: policy, legal and technical measures. These categories are indicated by the colour scheme (provided in the table below). They aim to signal the leading expertise or decision-making level required for the implementation of each measure, while being considered in an interdisciplinary setting.

Table 15. Legend for the colour scheme of the roadmap measures

| Colour | Type of measure  | Description   |
|--------|------------------|---|
|        | <b>Policy</b>    | The measures in this category cover the development of specific strategies and policies and their integration into the overall policy framework at the national level. They include establishing clear and measurable targets as well as monitoring the implementation of the strategies and policies. Furthermore, they imply supervision, coordination and other practical arrangements in terms of interdisciplinary work on open data and e-governance across various areas, including the environment. |
|        | <b>Legal</b>     | The measures in this category cover the development and adoption of new or revision of existing legislation followed by the development of secondary legislation, guidelines and methodologies in the area of open data and e-governance across various domains, including the environment. Legal measures include governance set-up, ensuring clear division of responsibilities and proposing enforcement mechanisms for obligations provided in the legislation.   |
|        | <b>Technical</b> | The measures in this category cover the adoption and/or development of technical tools, methodologies and procedures, as well as the introduction and adoption of international standards, where appropriate, at national level. These measures also embrace developing new competences and training specialists to ensure the successful implementation and sustainability of technology initiatives.  |



It is recommended for Georgia to implement measures proposed in the roadmap after consideration of the latest policy, legal and technology changes happening in the country. The table below suggests a recommended timeframe to implement measures with different priorities assigned. Considering that this domain is very dynamic these suggested time perspectives could be shortened.

Table 16. The recommended timeframe for measures implementation

| Priority | Recommended timeframe for the measure implementation |
|----------|--|
| High     | In the next 1-3 years                                |
| Medium   | In the next 3-5 years                                |
| Low      | Over the next 5 years                                |

Priorities proposed in this roadmap were based on information received and aggregated from 2018 to 2020. Depending on the measure implementation, changes in the policy, legislation or technology the suggested priorities might change. To ensure effective implementation of proposed measures and their relevance regular measure monitoring is essential.

**“Open data and e-government good practices for fostering environmental information sharing and dissemination” report**

The implementation of the proposed measures in the roadmap is assisted by the Good Practices Report “Open data and e-government good practices for fostering environmental information sharing and dissemination” (in brief, the Good Practices Report). This report is an integral part of the present project and provides relevant examples from other countries and organisations on the practical implementation of the roadmap measures.

The Good Practices Report is organised into two sections – e-government and open data – each part following the SEIS pillars “content”, “infrastructure”, and “cooperation (network)”. In addition to this, the following resources can also be used to support the implementation of the measures proposed in this roadmap:

- Report on the “Promotion of good practices for national environment information systems and tools for data harvesting at EU level”;
- Streamlining Environmental Reporting – Action Plan;
- Open Data Maturity in Europe 2019<sup>151, 152,</sup>
- Development of an assessment framework on environmental governance in the EU Member States<sup>153</sup> .

**5.2.1 Roadmap measures: Content**

The measures proposed to Georgia from the perspective of SEIS pillar: Content are presented in the table below.

<sup>151</sup> [https://www.europeandataportal.eu/sites/default/files/open\\_data\\_maturity\\_report\\_2019.pdf](https://www.europeandataportal.eu/sites/default/files/open_data_maturity_report_2019.pdf)

<sup>152</sup> [https://www.europeandataportal.eu/sites/default/files/european\\_data\\_portal\\_-\\_open\\_data\\_goldbook.pdf](https://www.europeandataportal.eu/sites/default/files/european_data_portal_-_open_data_goldbook.pdf)

<sup>153</sup> “Development of an assessment framework on environmental governance in the EU Member States” under the contract No 07.0203/2017/764990/SER/ENV.E.4 funded by the European Commission, Final report May 2019.



Table 17. Measures from the perspective of SEIS pillar: Content

| Measure  | Priority | Description  |
|--|----------|--|
| 1. Revision of the legal framework to promote and regulate the online accessibility and reuse of public sector information (PSI) | High     | <p>Adopt or amend, as needed, the legal acts referring to data management and accessibility related to the environmental domain (monitoring, assessment and reporting, management and control of natural resources, ecosystems and pollution) in accordance with the Aarhus Convention and the Protocol on PRTRs (as appropriate). This can include:</p> <ul style="list-style-type: none"> <li>• Improving an environmental information system by defining themes, sources (lists, registers, databases, funds, etc.), formats, metadata, licencing and interoperability requirements;</li> <li>• Improving procedures for environmental data collection and exchange in electronic format, and its accessibility as open data;</li> <li>• Improving procedures for managing environmental data flows and regular updating, quality assurance and control, reporting, inter-institutional sharing and exchange, online dissemination and other means of dissemination;</li> <li>• Setting up the public participation procedures for involving the public at large in the design, use and update of the environmental information system(s); considering ways to take on board citizen science and public engagement initiatives;</li> <li>• Streamlining the responsibilities of public authorities at all levels and across sectors to ensure clear competences and coordination;</li> <li>• Reviewing periodically the application of exceptions in the disclosure of environmental information;</li> <li>• Monitoring the legitimate application of these exceptions and the disclosure of information on emissions in accordance with the Aarhus Convention (in particular, clarifying the practical rules to separate non-confidential information of public importance for its further disclosure<sup>154</sup>).</li> </ul> <p><i>For guidance, consult the section “Designing an open data legal framework and provision of enforcement mechanism” of the Good Practices Report.</i></p> <p><i>This measure is closely linked with “Establish a collaborative institutional framework for the implementation of open data” in the Cooperation (network) section.</i></p> |
| 2. Adopt guidelines defining the   | High     | Adopt technical guidelines setting out the practical arrangements for environmental information  |

<sup>154</sup> Requested during the national roundtable



|    | Measure   | Priority | Description   |
|----|---|----------|---|
|    | practical arrangements for environmental information management, sharing and dissemination  |          | management, sharing and dissemination specifying: <ul style="list-style-type: none"> <li>• The scope of the environmental information system with metadata description and registry;</li> <li>• The environmental data management structure (including data architecture, data stewardship, system administration, data privacy, data security and data quality);</li> <li>• Decision-making procedures for sharing and making available online on relevant portals of non-confidential information and datasets (e.g. websites of public authorities, environmental portals – one web access point for environmental information, geospatial portals, statistical, open data and other portals);</li> <li>• Separation of non-confidential information, as appropriate;</li> <li>• Gradually amending the data quality assurance procedures in line with EU rules.</li> </ul>  |
| 3. | Develop and adopt an environmental data policy  | High     | Adoption of an environmental data policy by the authorities in charge of environmental protection to include: <ul style="list-style-type: none"> <li>• List of varied environmental information available and the scope thereof;</li> <li>• Basic terms of availability and accessibility, including open access and data sharing aspects;</li> <li>• Data holder support for availability and accessibility by third parties;</li> <li>• Rights and obligations of data and information holders/providers in terms of maintenance, update, quality assurance and reliability of data and information about their responsibility;</li> <li>• Licencing terms and conditions;</li> <li>• Contact point for access to environmental information.</li> </ul> <p><i>For an example of data policy, consult the European Environment Agency's website: <a href="https://www.eea.europa.eu/legal/eea-data-policy/data-policy">https://www.eea.europa.eu/legal/eea-data-policy/data-policy</a></i></p> |
| 4. | Develop/update licencing terms and conditions to promote open data access, use and reuse of | High     | This measure will involve defining the licencing terms and conditions used on the different portals for publishing and accessing environment data. <p><i>At present, there are no official and clear licencing mechanisms for reuse of the data available by public</i></p>   |



| Measure  | Priority | Description  |
|--|----------|--|
| environmental information using an open licence  |          | <p>authorities.</p> <p>According to the PSI Directive, it is recommended to use open licences as they are available online and provide clear licencing conditions<sup>155</sup>.</p> <p>More information about licencing is available in the Good Practices Report in the section “Harmonise licencing terms and conditions of environmental data to promote its public use and reuse”.</p>  |
| 5. Adopt/update interoperability standards for environmental systems   | High     | <p>Currently, the interoperability of information systems is mostly restricted due to an insufficiently developed legal framework and the lack of interoperability standards.</p> <p>This measure will review the existing standards for exchanging environmental data and information with the aim of standardising these exchanges.</p> <p>Based on the completed inventory, this measure will harmonise the use of standards and develop common guidelines for the automated exchange of environmental data and information.</p> <p>Specifically, these standards will include standards of metadata for data and information exchange between environmental information systems (e.g. interfaces could be built using web services).</p> <p><i>It is important to note that this measure is a prerequisite for building an effective integrated environmental information system.</i></p> <p><i>This measure is closely linked with the measures “Enhance interoperability of geospatial, statistical, health and environmental information systems” and “Establish an electronic registry of public environmental information” in the Infrastructure section.</i></p> |
| 6. Regular collection and timely reporting of environmental data and information in accordance with national and international obligations | High     | <p>This measure will:</p> <ul style="list-style-type: none"> <li>• Ensure the effective implementation of the Aarhus Convention and its decisions and recommendations by the Meeting of the Parties on promoting effective access to information and electronic information tools.</li> <li>• Consider the possibility of ratifying the Protocol on PRTRs;</li> <li>• Identify the practical arrangements for establishing the Pollutant Release and Transfer Register and for its incorporation within the integrated environmental information system(s) by using good international</li> </ul>  |

<sup>155</sup> Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the reuse of public sector information <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L1024&from=EN>



| Measure   | Priority | Description   |
|---|----------|---|
|   |          | <p>working practices;</p> <ul style="list-style-type: none"> <li>• Ensure traceability of assessments and indicators by linking them with the available data sources used;</li> <li>• Consider becoming a Party to other UNECE MEAs (e.g. Water Convention LRTAP and related Protocols) to improve environmental governance, monitoring and data management;</li> <li>• Ensure the implementation of other international commitments related to the regular provision of environmental data and information.</li> </ul>   |
| 7. Improve and make publicly available the quality assurance/quality control mechanisms behind the published environmental data and information | High     | <p>The results and methodology used for quality assurance and quality control of environmental data are to be published in a detailed manner in order to enable public and other stakeholders to assess the reliability of the data.</p> <p>This measure will:</p> <ul style="list-style-type: none"> <li>• Assess the current quality control mechanisms from the collection of environmental data, to aggregation, manipulation, processing and publication across the whole MDIAR chain<sup>156</sup>;</li> <li>• Publish the current procedures in place and set minimum standards to respect all stages of the data flow (data collection, data preparation and control, aggregation and data dissemination);</li> <li>• Complement/amend the legal framework by adding provisions setting up obligations at different levels, regarding the quality control of environmental data, including penalties for non-compliance;</li> <li>• Monitor the implementation of the quality control measures and set up an annual reporting process for the evaluation of the quality of environmental data provided.</li> </ul> <p><i>At present, quality control is the responsibility of the institution that collects data; however, there is no common quality control process that would ensure a uniform quality control procedure (see Section 3.1.3.3 Quality control of environmental data).</i></p> <p><i>The examples of criteria for assessing quality control mechanisms are depicted in the document “Promotion of good practices for national environmental information systems and tools for data harvesting at EU level”, page 165.</i></p> <p><i>Examples of standards, mechanisms and measures for quality control are also presented in the Good Practices</i></p> |

<sup>156</sup> The monitoring/data/information/assessment/reporting (MDIAR) chain is the flow of data and information from national monitoring to European reporting.



| Measure  | Priority | Description  |
|--|----------|--|
|  |          | <i>Report, in the section “Develop and publish quality control mechanisms for environmental data”.</i>   |
| 8. Define/adopt and publish metadata description standards for all environmental data and information in accordance with international standards using a one-stop access point | High     | <p>This measure will aim to define metadata standards to facilitate the dissemination/exchange of environmental data and information (including dissemination of environmental reports). As a result, it will be easier for institutions to manage and exchange environmental data, while also making it easier for the public to find information.</p> <p><i>Georgia developed its own metadata standard for the publication of open data. It is recommended that the international standards be adopted, as the standard development requires both technical expertise and resources. The adaptation of the standard to the EU standard DCAT-AP would require capturing additional metadata, which would also enable integration with other open data portals in Europe.</i></p> <p><i>Refer to the Good Practices Report to get more information about metadata standards for open data.</i></p> <p><i>This measure is closely linked with the measure “Enhance interoperability of geospatial, statistical, health and environmental information systems” in the Infrastructure section.</i></p> |
| 9. Expand collection, prepare and publish environmental data in a machine-readable format  | Medium   | <p>This measure aims to ensure the publication of environmental data in machine-readable format. Such a measure can be driven by the establishment of the open data legal framework, setting up the obligation to publish, as a rule, all datasets in machine-readable formats, unless data are not available in such a format and requires processing beforehand.</p> <p>To strengthen the open data initiative, Georgia could enhance the amount of data in machine-readable formats, even when the data requires additional processing.</p> <p>It is recommended that the state of the environment assessment report be regularly produced and made available online as an interactive product, preferably indicator-based.</p> <p><i>The Good Practices Report provides more details about machine-readable formats in the “Transformation of data published to machine-readable format” section.</i></p> <p><i>This measure is closely linked with the “Define and publish metadata description standard for all environmental information” measures outlined in the Content section.</i></p>   |
| 10. Inventory, re-engineering and publication of public services as e-   | Medium   | <p>This measure will define metadata standards and ensure that environmental services are described and accessible through the electronic service portal, in accordance with</p>   |



| Measure  | Priority       | Description  |
|--|----------------|--|
| services   |                | <p>national standards.</p> <p>For the description of public services, it is recommended that the European Core Vocabularies, such as Core Public Service, Core Person, Core Location and Core Public Organisation, be adapted. This would allow a coherent and standardised description of e-services and improved interoperability to be ensured.</p> <p><i>For an example of implementation, consult the Good Practices Report's "Publishing e-services on a dedicated e-service portal" section.</i></p>  |
| 11. Perform an open data impact analysis for the use/reuse of environment data | Continuou<br>s | <p>This measure will support raising awareness through regular assessment of the impact of the use/reuse of environmental data, as part of the open data impact assessment framework, and will drive further developments. For example, performance can be evaluated against the following criteria:</p> <ul style="list-style-type: none"> <li>• Number of environmental datasets downloaded and reused;</li> <li>• User feedback received/collected;</li> <li>• Number of applications developed using environmental data and having an impact on the environment (including reuse of environmental data by other sectors, such as transport).</li> </ul> <p><i>More information about the general open data impact assessment can be found in the Good Practices Report in the "European Data Portal Impact maturity" section. The section provides an example of the European Open Data Portal relevant for this area.</i></p> <p><i>This measure is closely linked with the "Strengthen the technical capability for environmental monitoring" measure in the Infrastructure section.</i></p> |

In order to facilitate the implementation of the provided measures, the Good Practices Report provides the following examples and recommendations:

- Building a digital strategy which includes the environment (example from Lithuania);
- Building e-services and public information systems according to national and international standards (examples from Estonia and the EU);
- Publishing e-services on a dedicated e-service portal (examples from the Lithuania, Romania and the UK);
- Develop a national strategy for open data and a measure plan to implement it for specific types of information (example from Ireland);
- Adopt an action plan based on the open data strategy and the digital strategy (example from the OGP);
- Adopt an open data policy, and extend it to environmental data (example from the EU);
- Designing an open data legal framework and provision of enforcement mechanisms (example from the EU);
- Definition of metadata description standard for all environmental information (examples from the EU and the UK);





- Transformation of data published to machine-readable format;
- Develop and publish quality control mechanisms for environmental data (example from the European Open Data Portal);
- Adopt/update licencing terms and conditions of environmental data to promote its public use and reuse (example from the European Open Data Portal);
- Evaluate the impact of open data (examples from the European Open Data Portal);
- Improve accessibility and use of available environmental data and information by improving the multilingual aspect of portals (example from the EEA).

## 5.2.2 Roadmap measures: Infrastructure

The measures proposed to Georgia from the perspective of SEIS pillar: Infrastructure are presented in the table below.

Table 18. Measures from the perspective of SEIS pillar: Infrastructure

| Measure   | Priority | Description   |
|---|----------|---|
| 12. Establish a single and user-friendly web access point for environmental information | High     | <p>A single access point could be designed as an entry point for the whole environmental policy domain to support the implementation of Decision VI/1 of the Meeting of the Parties to the Aarhus Convention.</p> <p>The following suggestions could assist in the development of an environmental portal (single web access point for environmental information):</p> <ul style="list-style-type: none"> <li>• Select a main technological solution, which will be used as a single and user-friendly web access point for environmental information – the technological solution should be chosen based on the most advanced existing environmental information system (e.g. the Environmental Information and Education Centre website, the Air Quality Portal or other currently-used software, which is built on the most up-to-date technology) <sup>157</sup>;</li> <li>• To ensure continuous development, include the main technological solutions to the national environment strategy;</li> <li>• Continue developing a single web access point by integrating additional data sources of environmental information (e.g. a single access point should provide environmental datasets, indicators, links to environmental reports and applications);</li> <li>• Consider migrating existing portals maintained by EIEC to a unified software solution to develop a more comprehensive environment portal and optimise EIEC maintenance efforts;</li> </ul> |

<sup>157</sup> The UK provides a series of good practices for developing a management system for environmental permits. These good practices can be considered when introducing a content management system for the environment, including standards such as (for example) the Eco-management and Audit Scheme (EMAS), EMAS Easy, ISO 14001, Green Dragon and Phases 1 to 5 of British Standard (BS) 8555. Link : <https://www.gov.uk/guidance/develop-a-management-system-environmental-permits>



| Measure | Priority | Description   |
|---------|----------|---|
|         |          | <ul style="list-style-type: none"> <li>• Provide web services and commonly agreed external application programming interfaces (APIs) to existing portals so institutions can easily share their (structured) data and have the possibility to download datasets (e.g. EEA public map services<sup>158</sup>, provisions of the INSPIRE Directive);</li> <li>• Implement a uniform tool for checking the quality of metadata provided by data providers;</li> <li>• Publish environmental data in accordance with the rules described in international metadata standards, such as DCAT-AP metadata vocabulary (this measure will also allow automatic synchronisation with other EU open data portals);</li> <li>• Enhance search functionality to allow the user to apply multiple field search and filter options (e.g. file format) to refine a search; combining keywords with classifiers;</li> <li>• Maintain and enhance the portal by including feedback gathering from the public through public consultation organised by ministries and governmental bodies.</li> </ul> <p><i>Environmental information and data are spread on multiple portals, as shown in this report. It is not clear which website has the latest or correct information published. The portals are also built using different technical solutions, which creates additional difficulties for solution integration and interoperability.</i></p> <p><i>On the other hand, some of these portals (e.g. air.gov.ge) are GIS-based and well developed. They could be used as a basis to create a single web access point for environmental information.</i></p> <p><i>More information about single access points can be found in the Good Practices Report in the “Establish a single and user-friendly web access point for environmental information” section (examples from the EU, EEA and Ireland).</i></p> <p><i>The design of the environmental information system is also widely described in the document “Promotion of good practices for national environmental information systems and tools for data harvesting at EU level”.</i></p> <p><i>This measure is closely linked with the measure “Revision of the legal framework to promote and regulate the online accessibility and reuse of public sector information (PSI)”, in the Content section, and measure “Establish a collaborative institutional framework for the implementation of open data”, in the Cooperation</i></p> |

<sup>158</sup> <https://www.eea.europa.eu/code/gis>



| Measure   | Priority | Description  |
|---|----------|--|
|   |          | <i>(network) section.</i>  |
| 13. Enhance interoperability of geospatial, statistical, health and environmental information systems | High     | <p>This measure will facilitate the implementation of the interoperability standards defined for environmental and other thematic data. This measure will:</p> <ul style="list-style-type: none"> <li>• Assess the existing compatibility of various information systems with defined interoperability standards, in particular with the geoportal;</li> <li>• Adopt/update and implement standards for metadata and data interoperability in accordance with international standards and good practices;</li> <li>• Develop APIs for external users;</li> <li>• Provide automated mechanisms for sharing time-series data.</li> </ul> <p>These actions can also be included in the national interoperability framework.</p> <p><i>Refer to the Good Practices Report for more details about the development of interoperability in Lithuania and the EU in the “Establishing an interoperability framework” section.</i></p> <p><i>This measure is linked with the measure “Develop and/or continue to enhance an integrated system for the management of environmental information in accordance with the Aarhus Convention and the Protocol on PRTRs” from the present roadmap.</i></p> |
| 14. Establish an electronic registry of public environmental information                              | High     | <p>This measure will aim to establish a registry of environmental information and data available in each institution and system (i.e. the metadata management system), as well as data that is publishable taking into consideration the legal framework in place. The registry will be used by public servants to support the continuous development of environmental information systems and the dissemination of environmental information. Particularly, the registry should map the systems, databases, institutions, datasets and reports published.</p> <p>This measure could be coupled with the standardisation of metadata for environmental information and with the development of a single web access point for environmental information, which would be automatically refreshed based on the registry of environmental information.</p> <p><i>The inventory of environmental information systems is widely described in the document “Promotion of good practices for national environmental information systems and tools for data harvesting at EU level”, in the section “Inventory of the environmental information system”.</i></p>                                    |
| 15. Improve accessibility and usability of available  | Medium   | <p>This measure will provide a full translation into Georgian/English of public institutions’ websites, yearly reports and environmental information metadata.</p> <p>Ensure the translation into Georgian/English of the</p>  |



| Measure   | Priority   | Description  |
|---|------------|--|
| environmental data and information by improving the multilingual aspect |            | national state of environment report available on the MEPA website as well as of other relevant products for their increased accessibility and use.<br><br><i>An example of a multilingual portal is the EEA GEMET<sup>159</sup>, which provides a thesaurus of environmental terms, currently translated into 37 languages.</i>   |
| 16. Develop e-services for the environment                              | Medium     | At present, few e-services are available for the environment.<br><br>This initiative will aim to develop environmental e-services according to the national standards (service passports) service interoperability standards (e.g. e-signature, e-payment).<br><br><i>More information about the description of public services can be found in the Good Practices Report in the section "Building e-services and public information systems according to national and international standards".</i><br><br><i>This measure is connected to the measure "Inventory, re-engineering and publication of public services as e-services" from the present roadmap.</i>   |
| 17. Strengthen the technical capability for environmental monitoring    | Continuous | This measure aims to strengthen the technical capability for environmental monitoring to other thematic areas such as water.<br><br>The gradual provision of modernised monitoring equipment should be planned and gradually ensured. To do so, the following is recommended: <ul style="list-style-type: none"> <li>• Define monitoring parameters at national and local levels for each thematic area. These objectives should include: <ul style="list-style-type: none"> <li>○ Frequency of observations (e.g. hourly, daily, monthly or yearly);</li> <li>○ Granularity of data gathered (accuracy);</li> <li>○ Space coverage (taking into consideration the spatial requirements – urban vs rural areas, industrial areas);</li> <li>○ Quality of data;</li> <li>○ Compatibility with existing equipment and information systems and, where possible, compliance with EU requirements as part of the approximation process.</li> </ul> </li> <li>• Conduct critical assessment in relation to the needs of the status and performance capabilities of the current monitoring infrastructure (for each thematic area, starting with priority areas such as, for example, water).</li> </ul> <p>This can be achieved through the establishment of a cross-sectional team of experts that could reflect on the</p> |

<sup>159</sup> <https://www.eionet.europa.eu/gemet/en/concept/4438>



| Measure  | Priority | Description   |
|--|----------|---|
|  |          | <p>existing equipment and provide a complete assessment of the needs aligned with the objectives defined above.</p> <ul style="list-style-type: none"> <li>• Develop a long-term and realistic national plan for gradual modernisation, taking into consideration all financial possibilities and options;</li> <li>• Follow this process by developing a coherent and stepwise implementation plan to gradually integrate new equipment into the existing system. This point is crucial as a lack of integration of the monitoring process in information systems: 1) renders the exchange of data cumbersome, 2) increases the need for human resources and 3) undermines the quality and availability of data.</li> <li>• Identify potential environmental areas to gradually complement the traditional environmental monitoring system with additional information coming from other sources (e.g. citizen science, earth observation).</li> </ul> <p>The acquisition of monitoring equipment requires consequent investments and should be well prioritised, bearing in mind the national needs, a long-term perspective and the approximation of the respective EU legislation.</p> <p><i>This measure is linked with the measure “Develop and/or continue to enhance an integrated system for the management of environmental information in accordance with the Aarhus Convention and the Protocol on PRTRs” from the present roadmap.</i></p> |
| 18. Develop and/or continue to enhance an integrated system for the management of environmental information in accordance with the Aarhus Convention and the Protocol on PRTRs | Medium   | <p>This measure recommends the development of an integrated environmental management system, which will ensure the coordinated management and exchange of environmental data and information. To do so, this measure recommends:</p> <ul style="list-style-type: none"> <li>• Making an inventory of all systems used for the management of environmental data and information, in particular that which is not publicly available, at the national level;</li> <li>• Establishing a pollutant release and transfer register as an integral module of the system.</li> <li>• Defining the requirements for an integrated system for environmental information management. In particular, the system should provide functionalities such as: <ul style="list-style-type: none"> <li>○ Workflow (e.g. quality management);</li> <li>○ Environmental data collection;</li> <li>○ Automatic dissemination and update of open data;</li> <li>○ Document management;</li> <li>○ Integration with external systems (statistical, health, open data, transport, energy and land</li> </ul> </li> </ul>  |



| Measure   | Priority | Description  |
|---|----------|--|
|   |          | <p>cadastral, etc., as needed);</p> <ul style="list-style-type: none"> <li>○ Advanced visualisation tools and capabilities for integration with business intelligence tools;</li> <li>● Gradual implementation of the system;</li> <li>● Training of potential users and institutions involved on the benefits, functionalities and usability of the integrated system;</li> <li>● Regular assessment of the performance and update of the system when needed.</li> </ul> <p>This measure will foresee the development of an efficient system for integrating various types of environmental information at different levels (sub-national, national) by connecting various existing systems.</p> <p><i>The document “Promotion of good practices for national environmental information systems and tools for data harvesting at EU level” presents guidelines for the development of environmental information systems.</i></p> <p><i>This measure is linked to the measures “Enhance Interoperability of geospatial, statistical, health and environmental information systems” and “Adopt/update interoperability standards for environmental systems” from the present roadmap.</i></p> |
| 19. Develop applications to engage the public in environmental monitoring and protection activities | Low      | <p>This measure will aim to develop a series of software applications (e.g. mobile apps) that will expand the potential for e-government to create an “environmental data ecosystem” and enable the public to access, consult and interact with environmental data.</p> <p>For instance, through the apps the public can:</p> <ul style="list-style-type: none"> <li>● access and consult environmental information in real-time according to their location;</li> <li>● report poaching, and mark and signal polluted areas, etc.;</li> <li>● participate in environmentally friendly events in their neighbourhood;</li> <li>● integrate environmental data they have collected with government apps, where possible;</li> <li>● use crowdsourcing (citizen-generated data) to capture environment monitoring data throughout the territory of Georgia.</li> </ul> <p><i>This measure is linked with the measures proposed in the Cooperation (network) section in the present roadmap.</i></p>  |

In order to facilitate the implementation of the provided measures, the Good Practices Report provides the following examples and recommendations:

- Establishing an interoperability framework (examples from the EU and Lithuania);
- Building an integrated environmental monitoring system at national level (example from Ukraine);
- Building an Open Data Portal and foster publication of public sector information (examples from Ireland, the Netherlands and Spain);



- Establishing a single and user-friendly web access point for environmental information (examples from Ireland and the EEA);
- Developing infrastructure on the most advanced platforms based on geospatial data and GIS technologies (examples from the EU and Lithuania);
- Providing technological support for sharing environmental data at the regional level.

### 5.2.3 Roadmap measures: Cooperation (Network)

The measures proposed to Georgia from the perspective of SEIS pillar: Cooperation are presented in the table below.

Table 19. Measures from the perspective of SEIS pillar: Cooperation

| Measure   | Priority | Description   |
|---|----------|---|
| 20. Establish a collaborative institutional framework for the implementation of open data | High     | <p>This measure will strengthen the necessary institutional framework for managing open data, especially taking into consideration the environmental component.</p> <p>This measure will focus on the need to create strong cooperation between institutions to ensure the exchange, sharing, reuse and publication of public sector information (PSI).</p> <p>An example of an approach to establishing a collaborative institutional framework for open data involves:</p> <ul style="list-style-type: none"> <li>• Amendment to the existing legal framework or additional secondary new regulations to foresee clear responsibilities of the various actors and ensure the clear division of responsibilities on open data at national and thematic levels (e.g. there should be general rules for governing the open data framework and specific rules for individual environmental data providers on how to organise an open data publishing process internally);</li> <li>• Establishment of a cross-sectoral working group which will assist/support and facilitate in the establishment of the operational mechanisms of collaboration (i.e. processes, procedures and good practices);</li> <li>• Organisation of events/fora/regular dialogues to foster collaboration between national stakeholders and various data users.</li> </ul> <p>This measure should also support collaboration in the field of spatial environmental information sharing. It should enhance cooperation between all of Georgia's ministries (including the Ministry of Environmental Protection and Agriculture represented in the NSDI State Commission) to ensure the participation of representatives of ministries, and their subordinated bodies and legal entities in the thematic working groups for spatial data infrastructure development.</p> <p><i>The Good Practices Report provides examples of initiatives undertaken in the EU to foster inter-</i></p> |



| Measure  | Priority | Description  |
|--|----------|--|
|  |          | <p><i>institutional and international cooperation in the field of open data. The open data maturity report 2019 provides criteria to assess the maturity of the institutional framework in a country. The document “Development of an assessment framework on environmental governance in the EU Member States” also provides good practices to establish an institutional framework for environmental governance.</i></p> <p><i>This measure is linked with the recommendations presented in the Content section of the present roadmap and the targeting of the revision of the legal framework.</i></p>   |
| 21. Develop and ensure increased capacity for handling environmental and open data                 | Medium   | <p>Components of this measure cover:</p> <ul style="list-style-type: none"> <li>• Assessment of the capacities needed (human resources and tools) for managing and making available environmental data and information at national and local levels;</li> <li>• Recruitment of specialised staff and acquisition of necessary tools;</li> <li>• Development and integration of procedures and processes for preparing and disseminating environmental data and information;</li> <li>• Professional development/training plans for civil servants and/or data stewards or data officers working with data. In this regard, it is possible to foresee official training programmes (mandatory) for staff in charge of data handling and to recognise these trainings through certificates.</li> </ul> <p><i>The document “Development of an assessment framework on environmental governance in the EU Member States” provides multiple examples of initiatives undertaken to build capacity in this area. The section “2. Administrative capacity (environmental inspectorates, police, customs, prosecution services and audit bodies)” focuses strongly on the example of capacity-building in the EU.</i></p> <p><i>This measure is linked with the measures “Strengthening of technical capacity for environmental monitoring” and “Develop and/or continue to enhance an integrated system for environmental information management in accordance with the Aarhus Convention and the Protocol on PRTRs” of the present roadmap.</i></p> |
| 22. Promote international and regional cooperation to facilitate the implementation of the roadmap | High     | <p>This measure aims to support Georgia with international expertise and good practices to assist in the implementation of the present roadmap. To do so, it is recommended that:</p> <ul style="list-style-type: none"> <li>• Fora and other platforms where experience can be shared be identified;</li> <li>• Contacts with key stakeholders at the regional and international level be established to share experience and good practices;</li> </ul>  |





| Measure  | Priority   | Description  |
|--|------------|--|
|  |            | <ul style="list-style-type: none"> <li>An inventory of international and regional initiatives be built and their potential assessed.</li> </ul> <p><i>The Good Practices Report provides examples of initiatives that can be undertaken to implement this measure, in the section "Increasing public administration, public and business awareness over open data and environmental data".</i></p>   |
| 23. Raise awareness of open government and open data for the environment among citizens and economic operators | Continuous | <p>This measure will increase the demand for open government and open data by raising awareness and conducting other promotion campaigns at national and local levels.</p> <p>This measure will focus on raising public awareness of the role and impact of environmental information, its accessibility, usability and other related aspects, by pursuing on-going activities and strengthening and expanding them where and when appropriate.</p> <p>Additionally, a series of activities for promoting the use/reuse and sharing of environmental information could be undertaken, such as:</p> <ul style="list-style-type: none"> <li>Hackathons;</li> <li>Fora;</li> <li>Promotion campaigns;</li> <li>Development of incubators;</li> <li>Development of public-private partnerships;</li> <li>Facilitating dialogue and cooperation between national bodies, NGOs and the academic community.</li> </ul> <p><i>The Good Practices Report provides examples of initiatives that can be undertaken to implement this measure, in the section "Increasing public administration, citizens and business awareness over open data and environmental data".</i></p> |

In order to facilitate the implementation of the provided measures, the Good Practices Report provides examples and recommendations on the following topics:

- Increasing awareness and motivation among public institutions over e-government and digital solutions (example from the EU);
- Increasing awareness of e-government among the public and businesses (example from the EU);
- Coordinating open data initiative(s) (example from Ireland);
- Establishing processes and procedures for managing open data (example from Lithuania);
- Increasing public administration, public and business awareness of open data and environmental data (example from Belgium, Cyprus, the EU, Italy and Luxembourg);
- Promoting open data to organisations;
- Collecting user feedback and providing new means of communication between open data providers and users (example from Spain).

