Sharing and dissemination of environmental information

March 2019

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Project background information and organisation

Sharing environmental information through national e-governance and open data frameworks based on SEIS principles should be further underpinned with clearly developed visions and comprehensive road maps for this specific area.
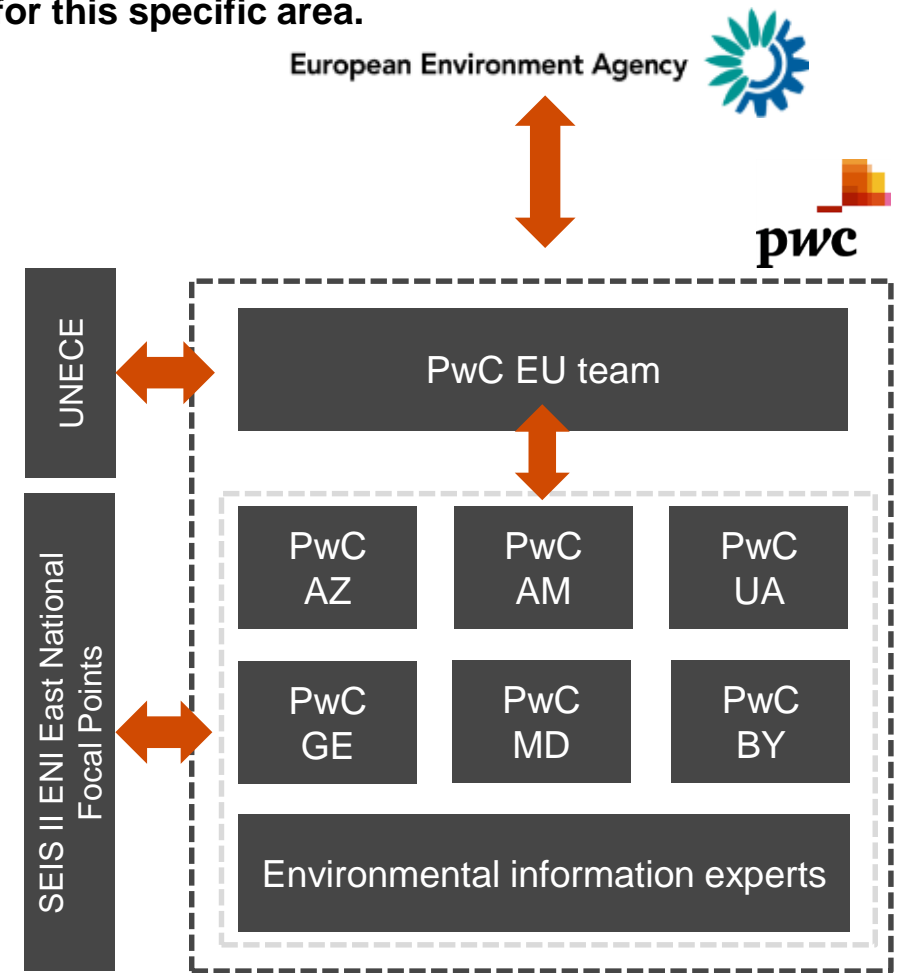
EaP countries have undertaken several international obligations and commitments to collect, update, share and disseminate environmental information as set out in:

- 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.

- The Protocol on Pollutant Release and Transfer Registers (Protocol on PRTRs).

- The Batumi Declaration "Greener, cleaner, smarter!" 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 (Luxemburg 2016).

- The 2030 Agenda for Sustainable Development.

Key objectives of project:

- Support governmental policies and actions in environment and related areas, the transition towards green economy, innovations, compliance with various reporting obligations as well as the implementation of various sustainable development goals (SDGs).

- Streamline efforts and reduce the reporting burden for the national bodies.

- Exchanging ideas, experiences and good practices between countries and institutions, seek advice and receive targeted assistance to make progress smoother and steadier.

Out of scope: environmental system architecture, detailed legal analysis, provision of framework/methodologies/APIs, detailed analysis of environmental monitoring systems and related organisations, financing mechanisms.

European Environment Agency

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UNECE	PwC EU team

SEIS II ENI East National Focal Points	PwC AZ	PwC AM	PwC UA
	PwC GE	PwC MD	PwC BY
	Environmental information experts		

Approach and methodology

Open Data Maturity in Europe

Report 2018

Dissemination and sharing of environmental information in EaP countries

Draft country maturity reports

Environmental information readiness

- E-government
- Open Data and environmental information legal and institutional framework
- Environmental data flows
- Progress so far

Technology enablers for environmental information sharing

- Portals
- Portal maturity for environmental data

Achieving a high level of maturity for environmental information management

- Main challenges
- Roadmap

Analysis based on publicly available material

Content

E-government and Open Data
International rankings of EaP countries for e-government

E-Government Development Index

Year	EaP Avg.	EU Avg.	UA	BY	GE	AZ	AM	MD
2014	0,57	0,73	0,50	0,60	0,60	0,55	0,59	0.56
2016	0,60	0,76	0,61	0,66	0,61	0,63	0,52	0,6
2018	0,66	0,80	0,62	0,76	0,69	0,66	0,59	0,66

Key challenges in EaP countries:

- Interoperability standards for exchange of information between systems.

- Provision of online services and standard metadata description.

- Provision of multilingual support for public authorities websites.

- Leverage on e-government initiatives for fostering environmental information monitoring, sharing and dissemination.

- Development of ICT skills in public institutions and raising awareness for implementing e-government solutions.

Good practice example

- **Development of the Nationwide automated information system (NAIS)**: the NAIS is designed to integrate national information resources and automate the activities of government bodies in providing information services to other government bodies, organisations and citizens.

  Result: State bodies are able to carry out their functions faster and more efficiently, including faster service delivery for citizens.

- **Integration of Google translate** plugin on public authorities webpage for automatic translation.

  Result: multilingual support and low implementation costs.

Good practice example

Review of public services and elaboration of a standard "service passport" for the description of public services on e-government portal. In the Republic of Moldova, the service passport will be based on the EU Core Public Service Vocabulary.

Result: citizen will be able to search for public services easily.

E-government and Open Data
International rankings of EaP countries for Open Data

Open Data Inventory (ODIN)

	AM	AZ	BY	GE	MD	UA	Avg.
Overall	53	51	48	55	67	42	53
Coverage	51	59	58	53	54	47	53
Openness	56	43	40	57	80	37	52

Key challenges in EaP countries:

- Provision of standard metadata for datasets published (and if appropriate compatibility with the EU DCAT-AP).
- Provision of multilingual metadata.
- Provision of datasets to the Open Data portal.
- Provision of datasets in machine-readable format.
- Provision of well documented APIs and Open Data community.

Good practice example

Open Data portal in the Republic of Moldova

The Open Data portal has grown significantly over the past years.

Key results:

- Numbers of datasets to date: over 1000 datasets and not far from 8000 resources.
- Publishing institutions: 46 central public administration agencies.
- Number of downloads: over 3 millions.
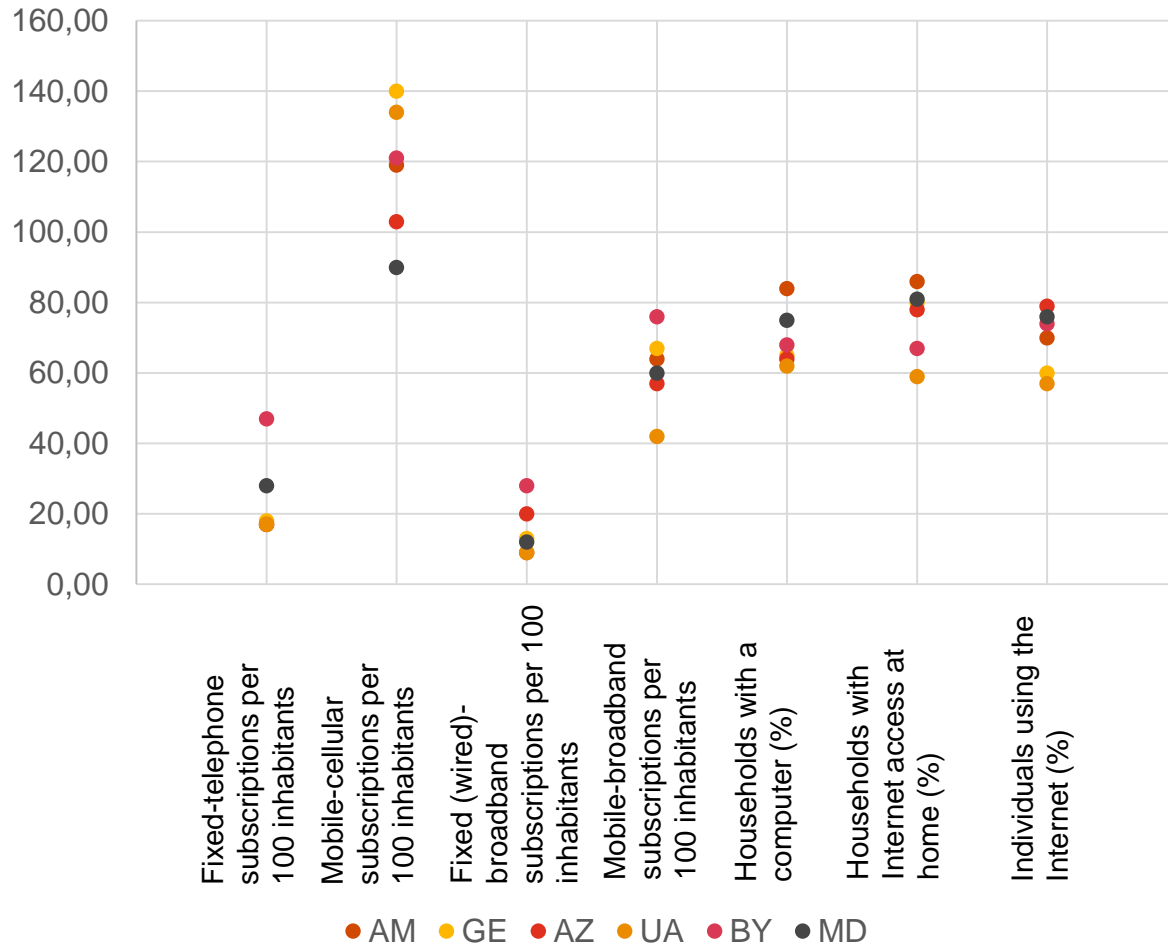
Good practice example

Ukraine has analysed the economic impact of Open Data in the country

The research is prepared by Kyiv School of Economics jointly with Open Data Institute within USAID/ UK aid Transparency and Accountability in Public Administration and Services program /TAPAS and with the support of the State Agency for eGovernance of Ukraine.

Result: Open Data could contribute up to USD 1.4 billion to the Ukrainian economy by 2025, representing 0.92% of Ukrainian GDP, through a combination of direct and indirect benefits.

ITU ICT Statistics

Chart axis values: 160,00 / 140,00 / 120,00 / 100,00 / 80,00 / 60,00 / 40,00 / 20,00 / 0,00

Categories: Fixed-telephone subscriptions per 100 inhabitants; Mobile-cellular subscriptions per 100 inhabitants; Fixed (wired)-broadband subscriptions per 100 inhabitants; Mobile-broadband subscriptions per 100 inhabitants; Households with a computer (%); Households with Internet access at home (%); Individuals using the Internet (%)

Legend: ● AM ● GE ● AZ ● UA ● BY ● MD

EaP countries are closing the gap with EU countries in terms of ICT usage. At the moment, Belarus is leading the overall ITU ranking among EaP countries.
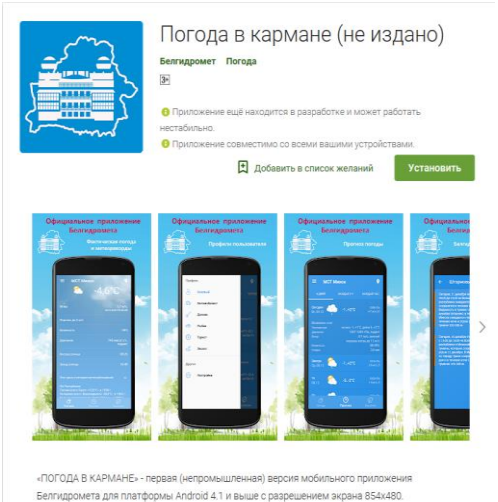
Overall, all EaP countries have at least 60% of households have access to internet. Hence, dissemination of environmental information online is less and less impacted by broadband maturity level.
New means of dissemination, including the development of mobile applications can be considered.

Good practice example

Development of App "Weather in a pocket"

Belgidromet's mobile app "WEATHER IN A POCKET" has been published, which provides to user information about the actual weather, hydrological, agrometeorological and radiation-ecological situation in settlements of the Republic of Belarus.

Погода в кармане (не издано)
Белгидромет   Погода

Приложение ещё находится в разработке и может работать нестабильно.
Приложение совместимо со всеми вашими устройствами.

Добавить в список желаний   Установить

«ПОГОДА В КАРМАНЕ» - первая (непромышленная) версия мобильного приложения Белгидромета для платформы Android 4.1 и выше с разрешением экрана 854x480.

Environmental information availability
Main reports published

Type of Report	AM	AZ	GE	UA	MD	BY
National environmental reports	🟩	🟩	🟩	🟩	🟩	🟩
Specialised reports - climate (national communications to UNFCCC)	🟩	🟩	🟩	🟩	🟩	🟩
Specialised reports - air	🟩	🟩	🟩	🟩	🟩	🟩
Specialised reports - water	🟧	🟩	🟩	🟩	🟩	🟩
Specialised reports - biodiversity	🟩	🟩	🟩	🟩	🟩	🟩
Specialised reports - waste	🟧	🟧	🟧	🟧	🟧	🟧
Indicator-based reports	🟩	🟩	🟧	🟩	🟩	🟩
National Statistical Yearbook	🟩	🟩	🟩	🟩	🟩	🟩
National Statistical Yearbook on environment	🟩	🟩	🟩	🟩	🟩	🟩
Report on sustainable development	🟩	🟩	🟩	🟩	🟧	🟩

Key challenges in EaP countries

- Establish mechanisms to enforce publication of environmental information (as appropriate).
- Timely availability of environmental reports.
- Make environmental data available faster.
- Provision of machine-readable data.
- Publication of quality control mechanisms and results.
- Availability of time series for environmental data.
- Establish national (or adopt international) indicators.

Good practice example

Voluntary publication of UNECE indicators

The website from the Statistical Committee - ARMSTATBANK.AM - publishes UNECE indicators. The website has been functioning since 14th September 2012, and developed with the support of Statistics Denmark within the framework of EU Twinning project "Forwarding Armenian Statistics Through Twinning".

Result: the website provide visualisation of data in various formats, including machine-readable and time-series.

Good examples across EaP countries for e-government, Open Data and fostering environmental information sharing and dissemination

Lake Sevan in Armenia

Throughout 2014 and 2015, the European Environment Agency supported the Armenian authorities to develop a pilot project aiming to establish a Shared Environmental Information System (SEIS) for Lake Sevan.

Developing of the Concept of establishing the National Automated System "Open environment" in Ukraine

The system will comprise 5 major elements: (1) environmental management system, (2) analytical sub-system, (3) portal of administrative services and State environmental registers, (4) geo-portal of environmental data and (5) information sharing segment.

E-government portal in Moldova

The online one-stop-shop of Public Services to Citizens and Businesses. It was launched on May 10, 2012. The development of v 2.0 of the website was included in the public service modernisation action plan. The portal provides information (service passports) on 635 public services on its informative interface, and access to 164 public e-services on its interactive interface.

UNECE indicators in Azerbaijan

Out of 49 UNECE environmental indicators, 23 selected indicators were assessed in detail within a 2017-2018 UNECE study on the state of production, sharing and use of UNECE environmental indicators in the EU Eastern Partnership countries.

Launch of the Ambient Air Quality Portal

As part of the EU-Georgia Association Agreement and commitment to improve air quality and sharing of information Georgia launched a new Ambient Air Quality Portal.
This is the first attempt for a non-EU country to exchange data with the EU and to integrate it into a single European information system.

Development of the Nationwide automated information system (NAIS)

Development of the Nationwide automated information system (NAIS): the NAIS is designed to integrate national information resources and automate the activities of government bodies in providing information services to other government bodies, organisations and citizens.

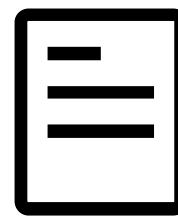# Environmental information sharing and dissemination
Good practices
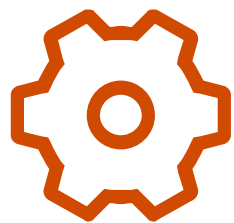
Provide mechanisms for enforcing dissemination of environmental information

Define metadata standards for dissemination of environmental information
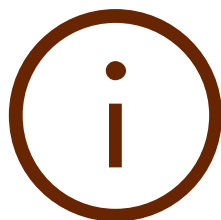
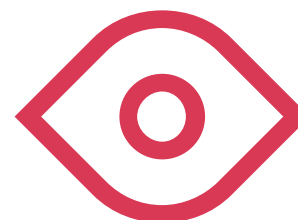Define licences for re-use of data published

Evaluate the impact of environmental data published (economic, social, political and environmental)

Publish environmental data and reports frequently

Disseminate environmental data in machine-readable format

Perform regular "awareness campaign"

Provide multilingual support & user friendly portals

Thank you

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Sharing and dissemination of environmental information

Infrastructure

Approach

Institutions and their legal responsibilities

Legal and institutional framework

Infrastructure

Environmental data flows

Data flow between institutions
Environmental data sharing arrangements

Monitoring and dissemination

Environmental monitoring system
Open data portal
Environmental portals
Statistical portal
Geoportal
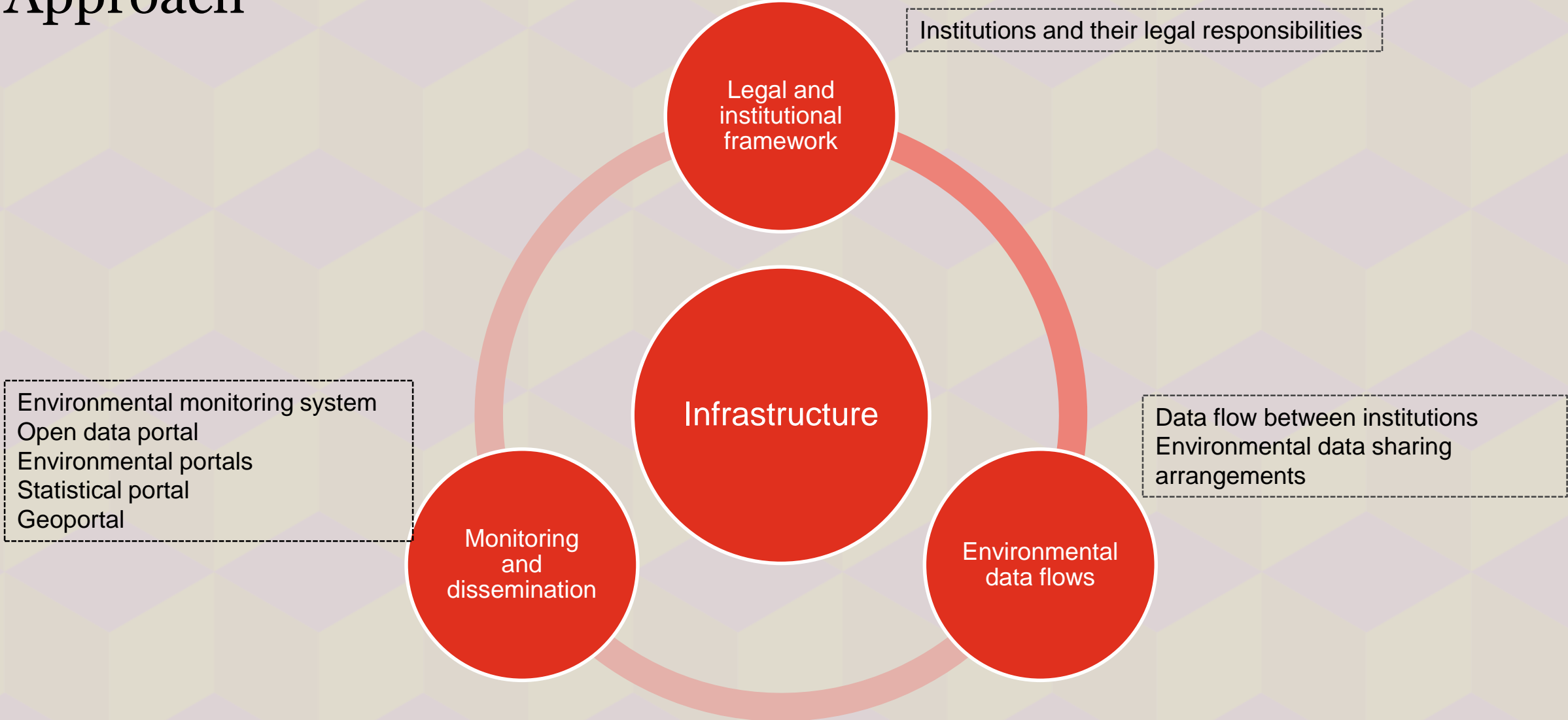
Environmental information monitoring management
Means of sharing environmental information between institutions in EaP countries

Key findings in EaP countries:

- Sharing agreements between institutions not always formalised, modalities not always publicly available and numerous agreements.

- Potential lack of legal frameworks to regulate exchange of data between institutions for monitoring and dissemination.

- Multiple data flows based on different systems with different standards.

- Lack of publicly available "data policy" and "quality control results" (as appropriate)

- Spread of systems and/or usage of paper.

Key challenges in EaP countries (as appropriate):

- Review of legal framework for formalisation of environmental information/data sharing between institutions and public authorities.

- (Further) development of environmental monitoring management systems.

- Integration of technologies to support information exchanged (e.g. document management, e-signature, e-services).

- Enhancement/development of (interoperability) standards for exchange of environmental data.

National Environmental Monitoring System in Belarus

The National Environmental Monitoring System aims to ensure the availability of environmental information at all levels of government as well as in support of implementation of international agreements.

There are 11 types of monitoring in the National Environmental Monitoring System, performed by various institutions. There is an Information and Analysis Centre for each type of monitoring.

The Interagency Coordinating Council oversees the functioning of the National Environmental Monitoring System and may request additional data or analytical information from institutions performing monitoring.
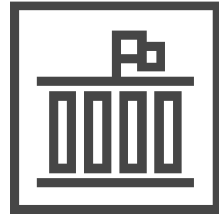
# Environmental information sharing and dissemination
Good practices
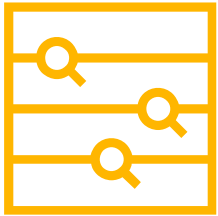
Ensure responsibilities for monitoring are clearly defined and provision of tools and methods for environmental monitoring
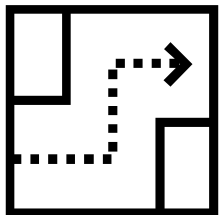
Integrate environmental sharing interoperability in e-government strategy

Align publication of information across platforms (i.e. environmental portals, Open Data portal)
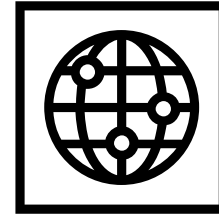
Leverage on international and regional experience (e.g. Joinup platform in the EU)

Adopt a simple governance model
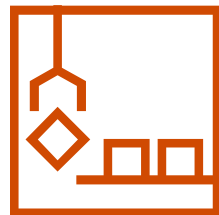
Build interoperability standards (i.e. organisational and technical, provision of building blocks)

Leverage on technology (e.g. e-signature, apps, blockchain)

Provide automatic multilingual support (as appropriate, taking into consideration confidentiality)

Portals for environmental information dissemination
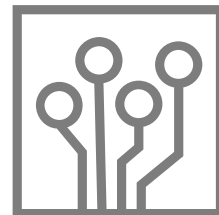## Main platforms maturity level

	AM	AZ	GE	UA	MD	BY
Availability of information on a central portal	Not available/unknown	Not available/unknown	Available	Not available/unknown	Not available/unknown	Available
Publication of environmental data on the Open Data portal	To be improved	To be improved	To be improved	To be improved	To be improved	To be improved
Description of environmental data according to metadata standards	Not available/unknown	Not available/unknown	Not available/unknown	Not available/unknown	Not available/unknown	Not available/unknown
Availability of environmental data in machine-readable format (excl. indicators)	To be improved	To be improved	To be improved	To be improved	To be improved	To be improved
User-friendliness of main environmental portals	To be improved	To be improved	Available	To be improved	To be improved	Available
Publication of time-series indicators	Available	Not available/unknown	Not available/unknown	Not available/unknown	Available	Available
Publication of environmental data on geoportal	To be improved	To be improved	To be improved	To be improved	To be improved	To be improved
Licence available for Open Data Portal	Not available/unknown	To be improved	Not available/unknown	Available	Available	Available

Legend: Not available/unknown · To be improved · Available

Key challenges in EaP countries:

- Define metadata standard for the publication of environmental data.
- Reduce spread of environmental reporting.
- Improve user-friendliness of environmental websites.
- Public datasets on the Open Data portal.
- Publish environmental data in time-series.

Good practice example

The website is administered by the Environmental Information and Education Centre. It is the central environmental information portal, as defined by Law.

The website provides information on environmental themes, projects, legislation, strategic documents, guidelines and so on. 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 pertaining to issued permits and other related information.

Portals for environmental information dissemination
Good practices
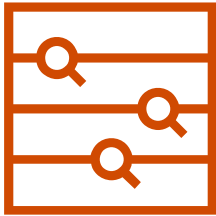
Ensure responsibilities for publication are clearly defined
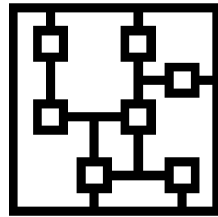
Leverage on geoportal and publish environmental data on it

Provide APIs to retrieve and publish data on each portal
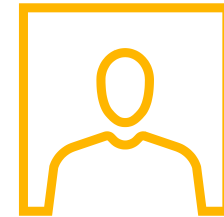
Build user-friendly portals

Limit the amount of portals but keep specificities
(e.g. Open Data, Geoportal and Eco-portal)

Define metadata standards for sharing data

Assess quality of metadata published

Provide an advanced statistical system for data visualisation

Thank you

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Sharing and dissemination of environmental information

Roadmap

Key findings of the previous sessions

- Governance: how to set up the right governance model and embed multiple stakeholders for Open Data?

- Increase awareness about Open Data: how to proceed?

- Numerous and various agreements between institutions; a lot of specificities per country and usually no standard for sharing agreements: what is the best solution?

- Licensing: which licence to use?

- Metadata standard for environmental information: what do we mean? Which standard to use? How should it be joined with Open Data initiatives?

- Duplication of data: how do you manage integrity of data published?

- Confidential data: how to handle them?

- Granularity of data: which granularity of data should be published? Should data be aggregated?

- User feedback is usually considered at national level

- Publication of environmental information does not always go through a central environmental information system

- Environmental indicators usually do not have a story behind it

- Amount of Portals: how many to have?

- Data quality: when should it be done? What are the typical mechanisms for quality control for environmental data?

Common key initiatives
Content

Initiative	
Revision of legal framework to promote accessibility and re-use of non-sensitive public information online	
Develop a national strategy for Open Data and action plan to implement it for specific types of information (as appropriate)	
Definition of metadata description standard for environmental information	
Build an electronic registry of public environmental information (as appropriate)	
Improve accessibility and use of available environmental data and information by improving the multi-lingual and user friendliness aspects	
Establish a single and user-friendly web-access point for environmental information through the public consultation on its functionality and design (see decision VI/1 of the Meeting of the Parties to the Aarhus Convention).	
Develop Open Data impact analysis framework (as appropriate)	
Raise awareness about open government and open data among the citizens and economic operators	

Common key initiatives
Infrastructure

Develop interoperability standards for environmental systems and establishment of norms regarding inter-institutional data flow exchange/sharing, its format and improvement of the management of data collected (as appropriate)	
Build a central system for environmental information management, including PRTRs and other types of environmental information in accordance with the Aarhus Convention, Protocol on PRTRs and decisions and recommendations of the Meeting of the Parties to the Aarhus Convention and the Protocol on PRTRs (as appropriate)	
Develop/enhance open data portal	
Leverage on/establish a geoportal for environmental data	
Engage citizens into environmental protection through technology	

Common key initiatives
Institutional Cooperation (Network)

Share knowledge and experience in environmental monitoring management system, Open Data, Geoportal, Eco-Portals, etc.

Establish a collaborative institutional framework for the implementation of an Open Data concept (as appropriate)

Review, standardisation, formalisation and publication of environmental data sharing arrangements (as appropriate)

Revision of actual capabilities of current entities handling environmental and open data issues

Group discussions

1. Reflect on the proposed national roadmap, and propose concrete measures for your country (up to 10 maximum; 45min – 1hr) – specific discussions on the reports will be done separately

2. Write down on the flipchart your key initiatives (in English if possible)

3. Present your initiatives to all participants (~5min each country)

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National roundtable (provisional planning)

Country	Date
Ukraine	Week of 22th April
Moldova	Week of 6th May
Belarus	Week of 20th May
Georgia	Week of 3rd June
Azerbaijan	Week of 17th June
Armenia	Week of 1st July

What to expect from the national round-table?

- Organisation of national round-table with key actors to be defined by EaP countries (key actors = initiatives drivers + Aarhus Convention country contact point + ad hoc).

- Address specific national situation and requirements.

- Further discussion of potential concrete projects in each country.

- Discussion of priorities for the key initiatives raised during the regional meeting and report.

What we expect from you before the national round-table?

- Nominate one point of contact for the draft maturity report in your country (by 20th March 2019).

- Send your comments over the "Draft maturity report" in Word by end of March 2019 and provide contact points for its update (as necessary).

- Provide contact points for key actions which you would like to see reflected in the report.

- Further discuss potential actions internally, and prepare with PwC/EEA the national roundtables.

Project next steps

Our objective is to provide you with a sound as-is analysis, practical measures, and best practices for your country. This report should be a tool for you to pinpoint key challenges and concrete measures.

The following steps will be:

- Review of draft reports to integrate/discuss the comments of the countries.
- Draft of best practices for key issues raised in the field of e-government, Open Data and environmental information sharing and dissemination taking into consideration the output of the event.
- National round-tables.
- Second regional meeting (September 2019?).

…

And the journey should not end here.

Thank you

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