Proceedings of the workshop

During this UNECE-EEA joint event, the following topics were discussed (see agenda[1]):

Session 1: Opening and introduction

The meeting was opened by the Chair Ms. Valentina Tapis from Republic of Moldova and Nicholas Bonvoisin from UNECE followed by opening remarks given by Galina Georgieva, Head of CAS1 Group on behalf of the EEA.

Fig.2 Mr. Szymon Lewandowski's intervention (DG CONNECT)

Galina Georgieva mentioned the role and activities of the EEA and Eionet in EU and pan-European region under the "Environment for Europe" process *and the* cooperation under the Shared Environmental Information System (SEIS) umbrella taking place with the European Neighbourhood countries since 2010 under dedicated EU-funding project and embraced at the pan-European level at the "Environment for Europe" Ministerial Conference in 2011 when it has been decided that: "...*the pan-European environment should be kept under review by establishing a regular process of environmental assessment and developing a Shared Environmental Information Systems (SEIS) across the region*". In June 2016 at the 8th Environment for Europe Ministerial Conference in Batumi, Georgia the countries were invited *"… to continue their efforts and to further develop their national information systems to have SEIS in place in the countries of Europe and Central Asia by 2021*".

Throughout the cooperation with the Eastern Partnership region, EEA has been supporting the SEIS implementation at national level contributing to the regular State of environment reporting – also as an input to the pan-European assessment process. In the EU context the SEIS concept has been revamped under the Streamlining environmental reporting process. In order to achieve this a 'Fitness Check' process was covering a number of pieces of EU environment legislation in order to assess their implementation, the policy impact versus the burden of reporting in an effort to streamline and reuse available information. This has been taken on board in the context of sharing EEA/Eionet good practice example with the partners in the Eastern region.

[1] http://www.unece.org/fileadmin/DAM/env/pp/a_to_i/Joint_UNECE-EEA_workshop/UNECE-EEA_Workshop_OD4E_Programme.pdf

Galina Georgieva mentioned the activity on Open Data for Environment was designed as part of the cooperation under second phase of ENI SEIS project in order to build on results of the thematic activities in a number of areas of work (i.e. water, biodiversity, air and land cover), to bring together environmental information in support of regular environmental assessments and state of environment reports, as well as to increase the environmental information availability, bring different institutional partners together (from transport, energy, agriculture, information systems, environment, statistics etc.) and encourage multiple use linked to ongoing initiatives on e-governance and open data in the Eastern Partnership countries.

The open data component, implemented by EEA with support from our contractor PricewatershouseCoopers (PwC), and in close cooperation and dialogue with the colleagues from the UNECE Arhus Convention secretariat has been aimed to assist the partner countries to develop a roadmap and identify feasible and practical means for integrating environmental information in national e-governance and Open Data processes and/or platforms. More about this we will hear during the course of today's meeting which is also rounding up this work and feed into the task force regular work.

It has been highlighted the trilateral agreement between EEA, UNEP and UNECE (agreed in 2015) to support the establishment of a regular environmental assessment process based on SEIS across the pan-European region (with the engagement of the UNECE thematic Conventions). This cooperation was one of the concrete examples of this partnership "in action". This is also a concrete example of the EEA efforts into supporting the knowledge base, networking and inclusive approach at a wider level, and particularly in view of the upcoming 30th anniversary of the 'Environment for Europe' process in 2021.

Session 2: Setting the scene: from data collection to knowledge management

Mr. *Szymon Lewandowski*, Data Policy and Innovation Unit, DG CONNECT, European Commission made a video presentation on "Open Data in the EU - current situation and outlook for the future". He particularly highlighted the legal framework at EU level on Open Data by mentioning the new 'Open Data' Directive 2019/1024/EU that entered into force on 16 July 2019, which:

1. Has a wider scope towards data held by some public undertakings and accessible research data resulting from public funding;
2. Enhanced re-use of dynamic data via APIs;
3. Free re-use by default (with narrowly defined exceptions that allow the recovery of costs);
4. Stronger transparency requirements for public–private agreements involving public sector information, avoiding arrangements resulting in 'data lock-in';
5. List of High value data sets (via Implementing act):
    - Geospatial
    - Earth observation and environment
    - Meteorological
    - Statistics
    - Companies and company ownership
    - Mobility

Mr. *Szymon Lewandowski* mentioned that an impact assessment will be conducted in 2020. He also mentioned the supporting activities in EU such as:

- **Open Data digital infrastructure: European Data Portal and EU Open Data Portal (https://data.europa.eu/euodp/en/data/)**

- **Connected Europe Facility (CEF)**: actions funded from the 2019-2020 Work Programme will improve the availability for re-use of existing open data falling into the high-value datasets categories, paving the way to more targeted actions funded under the Digital Europe Programme as of 2021, focusing on the actual datasets
- **Digital Europe Programme (DEP)**: Specific Objective 2 'Data for Artificial Intelligence (AI)' will strengthen core AI capacities in Europe, including data resources. Calls will focus on, inter alia, making specific datasets interoperable and fit for AI applications. Activities could cover, for example:
    - Curation;
    - Semantic annotation;
    - Harmonization of metadata;
    - Facilitating publication in machine-readable formats and accessibility through APIs.

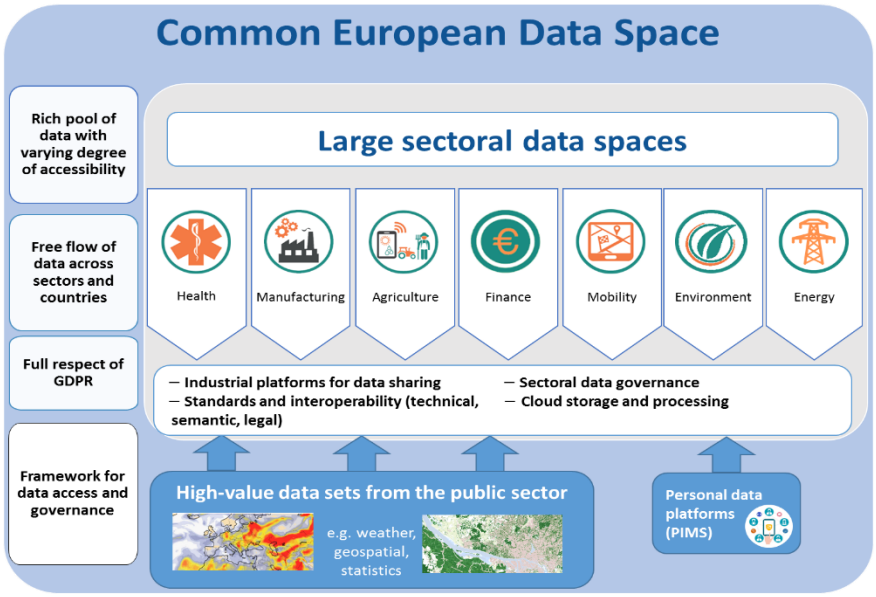

Fig.3 Slide from Mr. Szymon Lewandowski's presentation;
Links shared: http://www.europeandataportal.eu/ , http://data.europa.eu/euodp/en/home, http://ec.europa.eu/digital-single-market/en/open-data.

Daniela Cristiana Docan from EEA briefly introduced the work done within the scope of the project "Roadmap for integrating environmental information in national E-Governance/Open Data processes in Eastern Partnership countries (Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova and Ukraine)". In addition, she presented the main European policies and initiatives related to environmental data and information (Digital Europe Programme 2021-2027, Directive on open data and the re-use of public sector information or 'Open Data Directive' (Directive 2019/1024) entered into force on 16 July 2019, Streamlining Environmental Reporting initiative, the European Open Data portal and the way forward to continue the national process of improving the legal, organisational, technical frameworks to ensure that environmental information is integrated with national e-government and open data initiatives at country level in line with Aarhus Convention, Protocol on PRTRs, SEIS principles and other international commitments.

In summary, the following was mentioned:

1. **Outcomes** of the "Open Data for Environment" project are relevant to any environment or related domain, replicable to any other country/region, setup a model for the future initiatives, feed into the current projects implemented at national/regional levels.
2. Project is an **input to improving access to environmental information**, Aarhus Convention implementation, Task Force on Access to Information future work plan, current consultation process on "Recommendations on the more effective use of Electronic Information Tools to provide public access to Environmental Information".
3. **Practical activity** to feed into the legal/organisational/technical implementation of the Access to Information pillar of the Aarhus Convention at national level.
4. Encouraged the ENI countries to **continue the regular institutional dialogue** at national level and to **set up a regular monitoring process** to assess progress on SEIS implementation and to **assess the impact** of open data for environment.

Ms. Antje Lorch from Ecoropa and European EcoForum made the presentation "Open data, accessibility and the right to reuse it are of key importance to the public" from civil society perspective. The main ideas and conclusions were as follows:

- Information needs to be open, accessible and reusable as this is technical and political issue:
  - **Technically**: open data formats; meeting accessibility standards; can be exported;
  - **Politically**: no restriction, pro-active publication of data; easy to find websites – not apps; no restriction on how the public can reuse the data;
- There is a need for original data, full data sets (e.g.CSV), linked data (e.g. RDF, JSON-LD) rather that graphics made from aggregated data.
- Access to information and the agency to act on it has social & environmental benefits, even as it might challenge authorities and companies.
- Access to information is **not a goal** in itself, it's a necessary tool to achieve other goals; it helps us in dealing with climate change and biodiversity loss.

Session 3: Benefits, progress and current challenges in open data for the environment

Mr. *Nicolas HAZARD* (PwC), EEA project contractor for the ENI SEIS II East project, made the presentation on "*Good practices and lessons learned for the conclusion of a road map to modernise sharing and dissemination of environmental information in the Eastern Partnership countries*".

PwC provided a series of the most common challenges in EaP countries based on the main conclusions from the country maturity reports and shared good practices on the three pillars of SEIS:

1. Content

- Provide mechanisms for enforcing dissemination of environmental information and ensure responsibilities are clearly defined
- 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" for fostering publication and usage of Open Data
- Provide multilingual support & user friendly portals
- Provision of methods and tools for environmental information sharing

2. **Infrastructure**
- Provision of methods and tools for environmental information sharing
- Integrate environmental sharing interoperability in e-government strategy
- Provide mechanisms for ensuring consistency of data and reports published across portals
- Limit the amount of portals but keep specificities
- Adopt a simple governance model
- Build interoperability standards (i.e. organisational and technical, provision of building blocks)
- Leverage on e-government, Open Data solutions
- Leverage on geo-portal

3. **Infrastructure**
- Establish organisational structure and a clear division of responsibilities among the institutions at national, regional and local level
- Provide mechanisms and appropriate means for implementing the strategies
- Increasing awareness and motivation among public institutions about e-government, open data and the environment
- Build user community and gather their feedback
- Leverage on international and regional experience (e.g. Joinup platform in the EU)
- Involve the civil society
- Continuously develop skills and ensure availability of resources

In the second part of the session 3, all six ENI SEIS East countries have shared their case studies, challenges, good practices in open data for the environment and further steps and support needed to modernize the national environmental information systems. The following was mentioned:

Armenia:
- Effective Implementation of Aarhus Conventions;
- Improve metadata;
- International collaboration important;
- Creation of single portal and geoportal under development;
- Expand the electronic service dealing with the environmental data.

Azerbaijan:
- Create Electronic information database for state programs;
- New version of official web site of MENR;
- Preparation of information on all environmental components;
- Operative information;
- Work with other relevant government agencies to obtain relevant information;
- Strengthening cooperation with NGOs, experts, international environmental organizations, news agencies, etc.

Belarus:
- Expansion of the structure of environmental indicators in the framework of the development of the Joint environmental information system (JEIS) and organization of publicly available to the environmental information system;
- Adapting the structure of the environmental bulletin "State of the natural environment of Belarus" to the requirements of the Convention on availability of information, public participation in decision-making and access to justice in environmental matters;
- Development platform for the exchange of information on the state of the environment under the National Environmental Monitoring System in remote access mode.

Georgia:

- Development of unified information system;
- Supporting access to environmental information;
- Promoting UNECE environmental indicators;
- Supporting implementation of the Aarhus Convention;
- Mechanisms used in support of collection and dissemination of environmental information: information systems, wen pages, information campaigns, trainings, media.

Moldova:

- Implement the legal obligations, methods, tools, procedures and standards for environmental information /data management responsibilities amongst institutions;
- Develop the Integrated Environmental Information Management System to connect all the existent databases; digitalise databases stored on paper; share information between databases of different institutions; and to collect data electronically/digitally (*interoperability standards);*
- Improve the institutional collaboration and share of information through clearly stated legal, organizational and technological measures.

Ukraine:

- Management of UNECE environmental indicators data;
- Publication of indicators for decision makers and the public;
- Increasing of the open environmental datasets in machine-readable formats;
- Creation of 'Open Environment' portal as a priority.

From EU side, three Member State (Croatia, Slovakia and Ireland) shared their experience in developing national modern environmental information systems, main challenges on Open Data in enabling access to environmental information and future plans and trends.

The **main ideas and conclusions** were:

- Redesigning website information architecture and governance
- Publishing more environmental Open Data (while keeping general public in mind)
- Publishing more open real-time data (Air Quality)
- More data visualisation
- Reviewing numbers of portals (national level)
- More links between datasets (5* level Open Data)
- More accessible data / trends / localised / alerts / mobile
- Increased transparency and quality of public service
- Appropriate policy adjustments (The Directive on open data and the re-use of public sector information - Directive (EU) 2019/1024) – Improvement of licensing models
- Better utilization of data to address climate change
- Change of Mindset – improved communication and interaction in the public sector
- Increased trust of citizens in the state
- Support for the business and tax revenue via data driven economy
- Better re-use of open enviromental data in other sectors and domains
- Stimulation of innovations via education and research and development

Session 4: The Way forward

Mr. Stefan Jensen, expert on Environmental Information Management from EEA, had an intervention remotely during this session, he mentioned the following aspects:

1. **Current and future role of EEA in producing, providing and using environmental data**

- supporting reporting data flow on the environmental aquis - modernising the Reporting system – Reportnet 3.0
- producing Copernicus land data, developing citizen science approaches – elements of a data revolution
- producing European datasets, indicators and reports
- supporting the SDG process with indicators and data – the growing international dimension
- performing complex data analysis for integrated environmental assessments – growth of data science

2. **Content and technology/information related trends that influence and change the above**

- Systemic environmental approaches (climate change, circular economy, food system-sustainable production and consumption, human health and the environment, energy and mobility) need new data and new methodologies
- Big data, Internet of Things (IoT), sensors everywhere, data and science clouds, data cubes need new expertise
- Further changes to the EEA data and information system

3. **Governance related evolutions**

- Is the current network still fit for purpose? Needs and options for change
- Expand Eionet or build a federation of networks – identify the relevant partners and working methods

4. **This all happens under the new European and National policy agendas**

- Environment between Green deal and digitisation – sustainability and digitisation
- From European Data Centres to a European Data Space for environment and climate data
- European digital and data strategies – elements of an action plan
- Summary and some **implications beyond EEA/Eionet:**
  - Establishment of single web access points, conceived to be user-friendly, that aggregate data and information resulting from different reliable sources
  - Promote public accessibility to real-time, as appropriate, up-to-date, accurate and functional environmental information in forms and formats meeting the needs of different users

In closing the event, Galina Georgieva (EEA) highlighted the **key outcomes of the workshop**:

1. Clear trend towards Digitalisation and Open data;
2. Users engagement and national dialogue in this process is needed, as well as responding to the public needs (with increased interest in environmental information);
3. Data policy: GDPR, IP Rights, Free movement of data, sectorial cooperation, should be considered;
4. Data: High-value datasets; Quality; Standardisation; Formats;
5. Leverage on geospatial framework and interoperability between environmental, statistical and geospatial data;
6. Resource mobilisation and maximizing projects potential, as well as continuous sharing of good practices and examples;
7. Further discussions and cooperation, as well as revisiting the progress made at the next Task Force meeting in 2020.

More information about the events, including the meeting documents and presentations can be found on the respective webpages:

1. UNECE – EEA joint workshop "Open Data for the Environment" (2 October 2019)
2. Sixth meeting of the Aarhus Convention Task Force on Access to Information (3-4 October 2019)