European Environment Agency

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FOR INFORMATION

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Introduction

It is now five years since the European Commission proposed solutions to improve the collection, exchange and use of environmental data and information across Europe through a Communication entitled "*Towards a Shared Environmental Information System (SEIS)*"[1]. The term "SEIS" has become standard terminology for those involved with the use and analysis of environmental data – but we are continuing to strive towards truly sharing this vision of shared environmental information systems. Agreeing on a common understanding of what implementing **SEIS principles**[2] *really* means in practice is far from trivial, but has offered us the opportunity to seriously engage countries and the international community in focusing on the importance of sharing data and information. We are seeing more and more projects building on the SEIS principles, offering us opportunities to strengthen cooperation across topics and networks. This paper provides some reflections on the importance of sharing data as we aim to improve the environment, with special focus on the European Neighbourhood region.

Implementing SEIS can be tackled in different ways, as it undoubtedly deals with a broad set of goals and depends on the components of SEIS one chooses to focus on. Although the term SEIS refers to a "system", it would be fair to see it rather as a "process". Definitions of SEIS make reference to three main components; improving ***cooperation*** and building of (human) networks of providers and users

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1 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0046:FIN:EN:PDF

2 The 7 SEIS Principles are that: 1) Information should be managed as close as possible to its source; 2) Information should be collected once, and shared with others for many purposes; 3) Information should be readily available to public authorities and enable them to easily fulfill their legal reporting obligations; 4) Information should be readily accessible to end-users, primarily public authorities at all levels, to enable them to assess in a timely fashion the state of the environment and the effectiveness of their policies, and to design new policy; 5) Information should also be accessible to enable end-users, both public authorities and citizens, to make comparisons at the appropriate geographical scale (e.g. countries, cities, catchments areas) and to participate meaningfully in the development and implementation of environmental policy; 6) Information should be fully available to the general public, after due consideration of the appropriate level of aggregation and subject to appropriate confidentiality constraints, and at national level in the relevant national language(s); and 7) Information sharing and processing should be supported through common, free open source software tools.

of data and information; generating policy-relevant and comparable information (common **content**); and applying modern web-based information and communication technologies (shared technical *infrastructure*). It has been said that SEIS is really about a shift in approach, from data providers simply *reporting* data to meet specific needs and obligations, to creating *services* that make information available for multiple users – people *and* machines.

Good and timely information is needed to support policy development and implementation, guide allocation of financial resources, support environmental democracy and implementation of regional and international agreements dealing with transboundary environmental issues. In fact, two important trends justifying the increased demand for improved access and shared environmental information are that 1) access to information is highly prioritized (and not only "upon request"), and 2) the amount of (inter)national environmental legislation has grown significantly in recent years, making reporting more demanding and time consuming. National authorities need to find ways to reduce the administrative burden related to fulfilling reporting obligations and develop more efficient and open ways of compiling data and information and providing the relevant analyses which can then be used for many purposes.

The project "*Towards a Shared Environmental Information System in the European Neighbourhood*" (known as the "ENPI-SEIS" project)[3] is an EU-funded project implemented by the European Environment Agency (EEA) together with the partner countries. This 4-year project (ending in September 2014) builds on EEA's experiences with the European Environment Information and Observation Network (Eionet)[4] and strategic partnerships with the United Nations Environment Programme (UNEP) and the United Nations Economic Commission for Europe (UNECE). Eionet's mission is to provide timely and quality-assured data, information and expertise for assessing both the state of the environment in Europe and the pressures and driving forces acting upon it. This in turn enables policymakers to decide on appropriate measures for protecting the environment at national and European level and to monitor the effectiveness of existing policies and measures.

One way to provide focus for the Eionet member and cooperating countries when they are putting procedures in place for regular data reporting is through the Eionet "*priority data flows*". The purpose of the priority data flows is to show progress against agreed, stable and well-defined criteria, in order to allow countries to identify and confirm the institutional resources they need for regular reporting procedures. It also aims to encourage countries towards better performance through friendly competition, concentrating on achievements rather than failures. For the last evaluation round, 16 data flows were assessed, representing about half of the total number of 2 300 data deliveries received during the period May 2011 to April 2012[5]. The strength and stability of the Eionet structure, with nominated "National Reference Centers" for 27 topic areas in each of the member and cooperating countries is central to the success of such an exercise.

Collaboration and participation around establishing priority data flows demonstrates Eionet's readiness to play a key role in the implementation of SEIS, as relevant reporting systems are rapidly being modernised towards a network of decentralised systems providing online access to data, which are managed as close to source as possible while preserving measures to ensure quality.

3 http://enpi-seis.ew.eea.europa.eu/
4 http://www.eionet.europa.eu/
5 http://www.eea.europa.eu/publications/eionet-priority-data-flows-2012

Cooperation

The ENPI-SEIS project has been instrumental in establishing for the process two National Focal Points for each of the 16 partner countries. These National Focal Points are high-level officials representing the environment and statistical organisations respectively and responsible for managing and developing the environmental information system in the countries. This is central to the ENPI-SEIS initiative that aims first and foremost at strengthening institutional infrastructures for environmental information management and sharing by facilitating and encouraging the establishment of national environmental information networks. The sustainability of such networks and the continuation of information sharing activities will rely on the identification and establishment of coordinating entities for these networks.

Common content

An entry point and priority area for the ENPI-SEIS project has been to encourage the production of common, compatible *content*; that data is processed and aggregated based on harmonised methods and standards (link to indicators) to have results analysed using common analytical approaches (link to assessments). During the first half of the project, much emphasis was placed on developing and agreeing on common data structures and indicators, in partnership with the UNECE Joint Task Force on Environmental Indicators for the Eastern countries, and in support to the Horizon 2020 initiative and the Euro-Mediterranean Process for the Southern countries. The process has evolved to the point where data reporting tools and methodologies developed and managed by the EEA are now being customized and made available to the neighbourhood partner countries to facilitate open access, sharing and re-use of datasets.

Recent developments

It is important to distinguish between *data* (as in the context of data flows), and environmental *indicators*. An indicator is a measure, generally quantitative, that can be used to illustrate and communicate complex phenomena simply, including trends and progress over time. To help specify and distinguish between the different types of information needed to support the policy process, the *Monitoring-Data-Indicator-Assessment-Knowledge* (MDIAK) framework is useful. Results from monitoring and observations become datasets which underpin the production of indicators in order to assess a situation with the aim to increase our knowledge. A core SEIS principle is that data should be "collected once, and shared with others for many purposes" – in this case, for example, indicator production for any process or interested organisation or party.

At the global level, much is happening to streamline and facilitate access to environmental data and knowledge. Two examples are the launches in 2012 of the *UNEP-Live* Prototype – to track the state of the environment through access to data, maps, graphics, indicators, and reports, and the *United Nations Information Portal on Multilateral Environmental Agreements (InforMEA)* – harvesting decisions, news and reports from MEAs. The EEA is an active partner in these initiatives.

At the European level, efforts are ongoing since 2009 through the Shared European National State of the Environment project (SENSE and SENSE-2, coordinated by the EEA) to develop and test IT infrastructure and methods for automatic National-to-European, European-to-National, and National-to-National information exchange, aiming to move towards a shared environmental information system for national assessments on the environment. SENSE has established an automated process where interested countries have reported online their state of environment information from national websites to the EEA's SOER 2010 (European environment state and outlook 2010 report) web pages for "Country assessments". Phase 2 of the SENSE project, started in 2012, is focusing on the exchange of indicators.

Another advancement towards facilitating SEIS across Europe is the development of the EEA's Data Policy. The objective of the EEA Data Policy is to promote a full, free and open dissemination and access to data held by EEA. In agreeing to share, data providers need to have assurance that their data are properly handled, disseminated, used and acknowledged following similar principles and rules across countries and stakeholders. After an extensive consultation process, this Data Policy will be presented to the EEA Management Board for adoption in March 2013.

With one and a half years to go until the end of the current ENPI-SEIS project, we are set to see this SEIS shift of approach become reality for the European Neighbourhood countries, with a strong collection of cases demonstrating political will, interest and capabilities to share environmental data and information.