EEA Briefing

February 2011

Shared environmental information systems (SEIS)

Summary: To improve the collection, exchange and use of environmental data and information across Europe, the European Commission proposed a solution through its February 2008 Communication entitled 'Towards a Shared Environmental Information System (SEIS)'. SEIS aims to create an integrated web-enabled, EU-wide environmental information system, by simplifying and modernizing existing information systems and processes. EEA is a leading proponent of SEIS, plays a crucial role in collecting and providing environmental information, and manages or participates in many ongoing European initiatives contributing to the implementation of SEIS principles.

Who needs information about Europe's environment?

Across Europe, environmental data and information are widely collected, analyzed, exchanged and used for multiple purposes. One use is to help EU policymakers in Brussels better develop and implement environmental policies, and then to assess whether they are working or not. To do this, they need quality and timely information on the state of Europe's environment (SoE), trends, pressures and drivers. Another is to help national authorities prepare for emergencies such as floods, or to manage accidents such as toxic or oil spills.

Accordingly, the public authorities of EU Member States have many legal obligations to report environmental data and information. This includes, for example, information on lake water quality which countries report to the European Environment Agency (EEA) – in turn, EEA assesses the information for different products such as its recent *European environment – state and outlook 2010* report (SOER 2010).

Environmental information is also needed to empower citizens, so they can effectively influence public policy, and make informed decisions about the environment and how they consume. Furthermore, as the environment is a public good, they have a right to widely available information, such as air quality in their neighbourhood. European businesses also use environmental information, for example, to track their impacts on the environment; predict future supplies of resources needed for operations; or as an incentive to develop innovative solutions for environmental problems.

Simplifying and modernizing through 'SEIS'

Over the years, it was observed that the collection, exchange and use of data and information could be improved. Users often hit barriers in their attempts to find, or even understand, what they needed. EU policymakers in particular have faced many challenges in accessing information necessary for evaluating their policies.

In February 2008, the European Commission (EC) proposed a solution through its Communication entitled 'Towards a Shared Environmental Information System (SEIS)'. SEIS is now a collaborative initiative of the EC, and the EEA and its member countries and cooperating countries. In fact, its implementation is now at the centre of the EEA's 2009-2013 Corporate Strategy and daily operations.

SEIS aims to create a decentralized but integrated and web-enabled, Europe-wide environmental information system -- based on a network of public information providers that share environmental data and information. This can be achieved by simplifying (or "streamlining") and modernizing existing information systems and processes, thereby improving quality, availability, accessibility and understanding.

SEIS is based on the following 'principles':

1. Manage information as close to its source as possible.
2. Collect information once, and share and use often.
3. Help public authorities with their legal environment reporting obligations.
4. Help public authorities to assess the state of environment (SoE), and environmental policy effectiveness, and to design new environmental policy if needed.
5. Help make geographical comparisons of the environment.
6. Help citizens to participate in the development and implementation of environmental policy, while making information fully available to them.
7. Base SEIS on open standards.

A key goal is to maximise and expand use – information is often created to serve one purpose, but the truth is, there is usually lots of potential for other uses, and applying SEIS principles makes that easier. For example, information about floods, while needed to mitigate potential flood impacts, is also extremely valuable for insurance companies and homebuyers, to assess risks for buildings.

To make SEIS possible, a key condition is a shift from 'controlling' information to 'sharing it', as freely as possible. An added benefit will be a reduction in the administrative burden of public authorities – for example, electronic systems could automatically replace much of the human resources now devoted to exchanging information -- and the associated cost savings from improved efficiencies.

Figure 1: SEIS is also about shifting the approach -- from individual Member States reporting data to specific international organizations, to Member States creating online systems with 'services' that make information available for multiple users – people *and* machines.
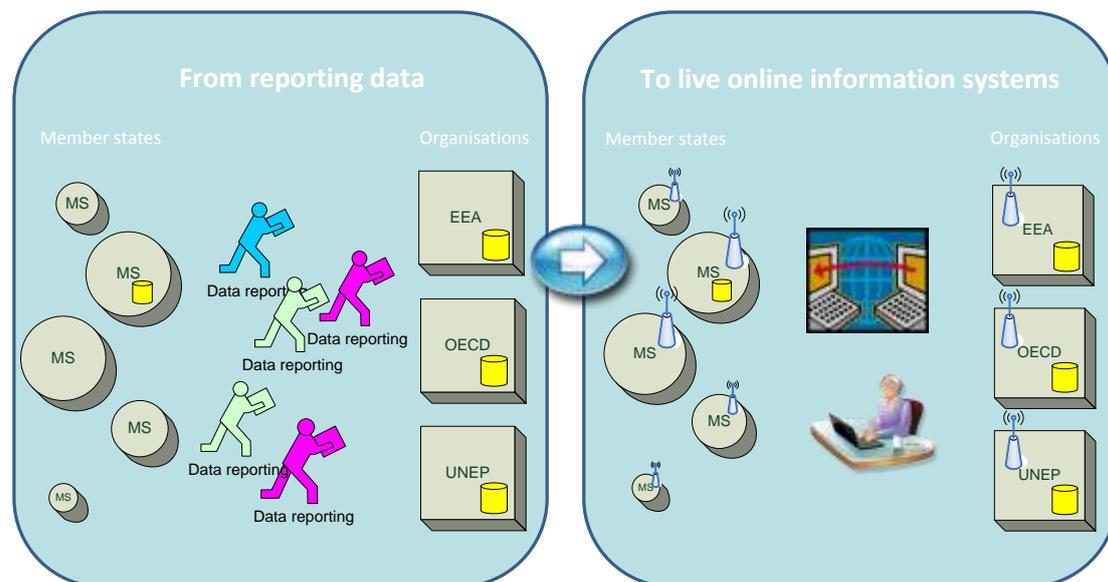
Clearly, SEIS needs to take advantage of, and foster the development of, modern information and communication technologies (ICTs), such as the internet and satellite systems. This includes ICTs providing real-time data which can be used for immediate decisions – from national governments managing emergencies, to citizens planning their day by being informed about local weather or traffic conditions.

SEIS is happening now, with significant EEA support
EEA is a leading proponent of SEIS. It plays a crucial role in collecting and providing environmental information with the help of its 'European environment information and observation network' (Eionet).

Eionet includes some 900 experts from over 300 environment bodies in 38 European countries. Its 'Reportnet' infrastructure, which integrates different web services, was initially used for reporting environmental data to the EEA, but it is now also hosting some of the EC's requirements for environmental reporting. One recent success is that Sweden, Norway and Slovenia now use Reportnet for almost all their European and international reporting requirements (e.g. EU- and UN-related).

Since 2007, EEA has conducted 'SEIS Country Visits' to 36 of its 38 member and cooperating countries, to explain SEIS, encourage implementation and discover existing SEIS activities at the national level. Some conclusions to date are:

- Some countries are fairly advanced in implementing SEIS principles, while others need to take significant steps.
- Most are up to date with the new opportunities offered by modern ICTs.
- Some countries have a need for better cooperation between institutions.
- The benefit of having access to European information within a national context is still often vaguely recognised within countries.

A recent EEA success story with SEIS was the completion of the 'SENSE project'. Since December 2010, SENSE has established an automated process for 13 countries to report online their state of environment (SoE) information from national websites to the EEA's SOER web pages for 'Country assessments'.

EEA also manages or participates in many ongoing European initiatives contributing to the implementation of SEIS principles. For example:

- Initiative to build an **IN**frastructure for **SP**atial **I**nfo**R**mation in **E**urope (INSPIRE): Aims to improve the accessibility and interoperability of spatial data.
- **G**lobal **M**onitoring for **E**nvironment and **S**ecurity (GMES) initiative: Aims to provide information services based on Earth monitoring data obtained from satellites and *in-situ* observations of water, air and land.
- The **G**roup on **E**arth **O**bservations (GEO), a global partnership which includes the EC and its Member States, is coordinating efforts to build a Global Earth Observation System of Systems (GEOSS). GEO principles include data sharing and interoperability.
- **W**ater **I**nformation **S**ystem for **E**urope (WISE)**:** Integrates reporting data flows from many water-related directives as well as water-relevant statistical data.
- EEA portal for sharing ozone information (OzoneWeb): Links national and regional ozone websites informing users with real-time local air quality data.
- The Biodiversity Information System for Europe (BISE).
- SEIS-ENP: EEA is managing a project (2010-2014) to extend SEIS principles to the European Neighbourhood Policy (ENP) east and south 'neighbours' (16 countries).

The EC expects to publish an official implementation plan for SEIS in summer 2011.

For more information on SEIS:
- EEA: SEIS explained; Animation on SEIS
- European Commission/DG ENV