

HOW to share data - policies and principles

WHAT, HOW, WHO - EEAs implementation of SEIS

WHY to share data - societal benefits and challenges



HOW to share data - policies and principles SEIS and related EU policy instruments

European Commission > Environment > SEIS

Home | Who's who | Policies | Integration | Funding | Law | Resources | News & Developments

Shared Environmental Information System

Why is SEIS needed?

- Because EU Policy makers at all levels (local to European) are convinced that better decisions need better and more timely information
- Because EU Member States deserve a modern, efficient and user friendly e-Reporting System to fulfil their reporting obligations related to European Union environmental policies and legislation, avoiding duplication of efforts, overlapping and redundancies.

Timely, reliable and relevant information on the state of the environment is essential for sound policy making. Policy makers and the public need to know in a timely manner how the climate is changing, whether European waters are becoming cleaner or more polluted, how nature is reacting to pollution and changing land use and whether policies are effective. This information should be made available to all in a way that everyone can understand the changes to the environment and their impact.

The Sixth Environment Action Programme (6EAP) confirmed that sound information on the state of the environment and on key trends, pressures and drivers for environmental change is essential for the development of effective policy and its implementation, and for empowering citizens more generally. As the environment is a public good that belongs to everyone, it is equally essential that this information be widely shared and available.

The need for sharing environmental information

More than 70 of the several hundred pieces of environmental legislation in force in the European Union require Member States to report on specific aspects of the environment within their territory. A large amount of environmental data is thus collected by various levels of public authorities throughout the EU.

This information is used to analyse trends and pressures on the environment and is vital when drawing up policy or assessing whether policy is effective or being properly implemented. At present, this wealth of information is neither made available in a timely manner nor in a format that policy makers and the public can readily understand and use. This is due to a range of obstacles of a legal, financial, technical or procedural nature.

Good decisions need the right information at the right time

a) SEIS communication 1/2008

European Commission > Environment > Law > Implementation

Home | Who's who | Policies | Integration | Funding | Law | Resources | News & Developments

Legislation
Implementation
Liability
Crime
Aarhus Convention
Links

Compliance Promotion

Communication on Improving the delivery of benefits from EU environment measures: building confidence through better knowledge and responsiveness

On 7 March 2012 the Commission adopted the [Communication on Improving the delivery of benefits from EU environment measures: building confidence through better knowledge and responsiveness](#). For further information see the press release ([IP/12/220](#)), the [citizens' summary](#) and [Questions & Answers](#).

A high level of environmental protection is one of the fundamental objectives of the European Union. However, the latest state of the environment reports show serious implementation concerns in key areas, such as, biodiversity, water, waste and air.

Implementation has a cost. But the cost of non-implementation is very often much higher. The costs of not implementing current legislation are broadly estimated at around €50 billion a year in health costs and direct costs to the environment. The Communication also underlines the benefits of environmental law and advantages it can bring to the industry. In the waste sector alone full implementation would generate an additional 400,000 jobs with net costs that are €72 billion less than non-implementation.

Better and more consistent implementation would not only help to achieve the objectives for a cleaner and healthier environment but also to ensure a more level playing field and incentives for green growth.

b) Communication on better implementation 3/2012

c) SEIS implementation outlook

http://ec.europa.eu/environment/seis/pdf/seis_implementation_en.pdf



SEIS principles



Data and information are:

- Managed as close as possible to its source.
- Collected once, and shared with others for many purposes.
- Readily available to easily fulfil reporting obligations.
- Easily accessible to all users.
- Accessible to enable comparisons at the appropriate geographical scale, and citizen participation.
- Fully available to the general public, and at the national level in the relevant national language(s).
- Supported through common, free open software standards.

Content

Infrastructure

Institutional cooperation



SEIS implementation outlook – shortcomings

Quality of data and information

lack of comparability in the information provided by the Member States
scale of the data and the level of detail in the assessments

Data flows and information systems

Where the public at large is concerned

Not suited to the needs

Not enough flexibility, not enough feedback possibilities

Where the Member States and local authorities are concerned

better address cross-border environmental issues

improved ways to find data and information needed

Data redundancy – not following SEIS principles

Where the Commission is concerned

More timely access in support of policy proposals

Better monitoring of implementation of legislation

Better dissemination through more open source powered solutions



SEIS implementation outlook – priorities

Assessing (and support the improvement of) the current capacities within the Member States

(e.g. Copernicus GISC, EMODNET, GEO projects)

Streamlining EU reporting requirements towards fully on-line reporting

(e.g. WISE, BISE, SENSE, eReporting systems)

Improving public access to environment information

(EU open data strategy, strengthen EU environmental data centres)

Improving public participation in the collection and dissemination of environment data and information

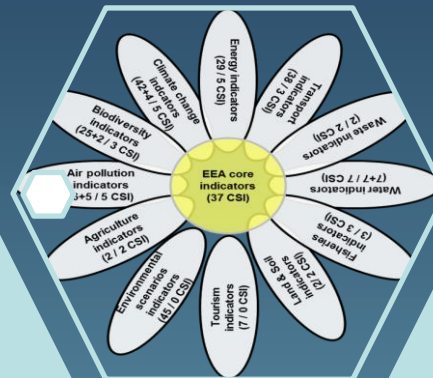
(e.g. review of PSI directive)

Promoting and assessing the implementation of the Infrastructure for Spatial Information in Europe Directive

(Review INSPIRE – a core architecture for SEIS)



WHAT to share SEIS pillar “content”

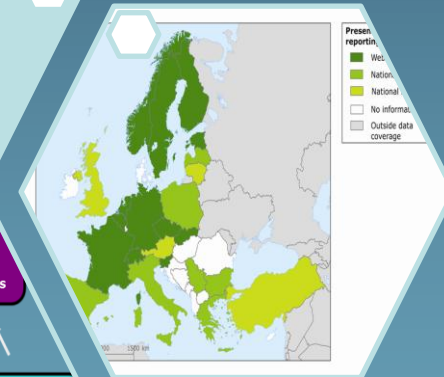
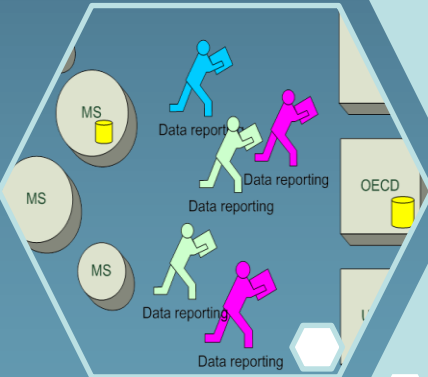


Rationalise the linkage indicator – data

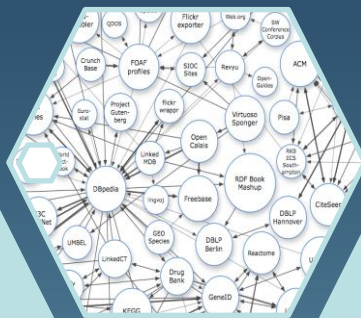
Apply open data technologies to indicator exchange

Develop more intergrated and interoperable indicators

Apply SEIS principles for own system developments



HOW to share SEIS pillar “infrastructure”



Building web mapping services

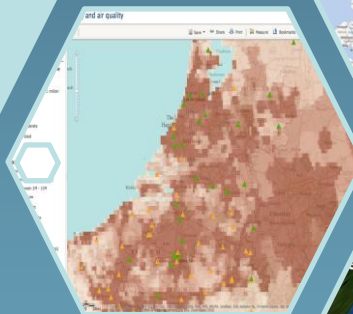
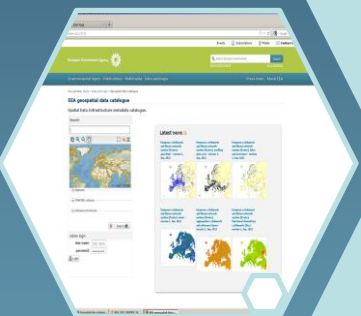
Publishing data „linked and open“

Increasingly use social media

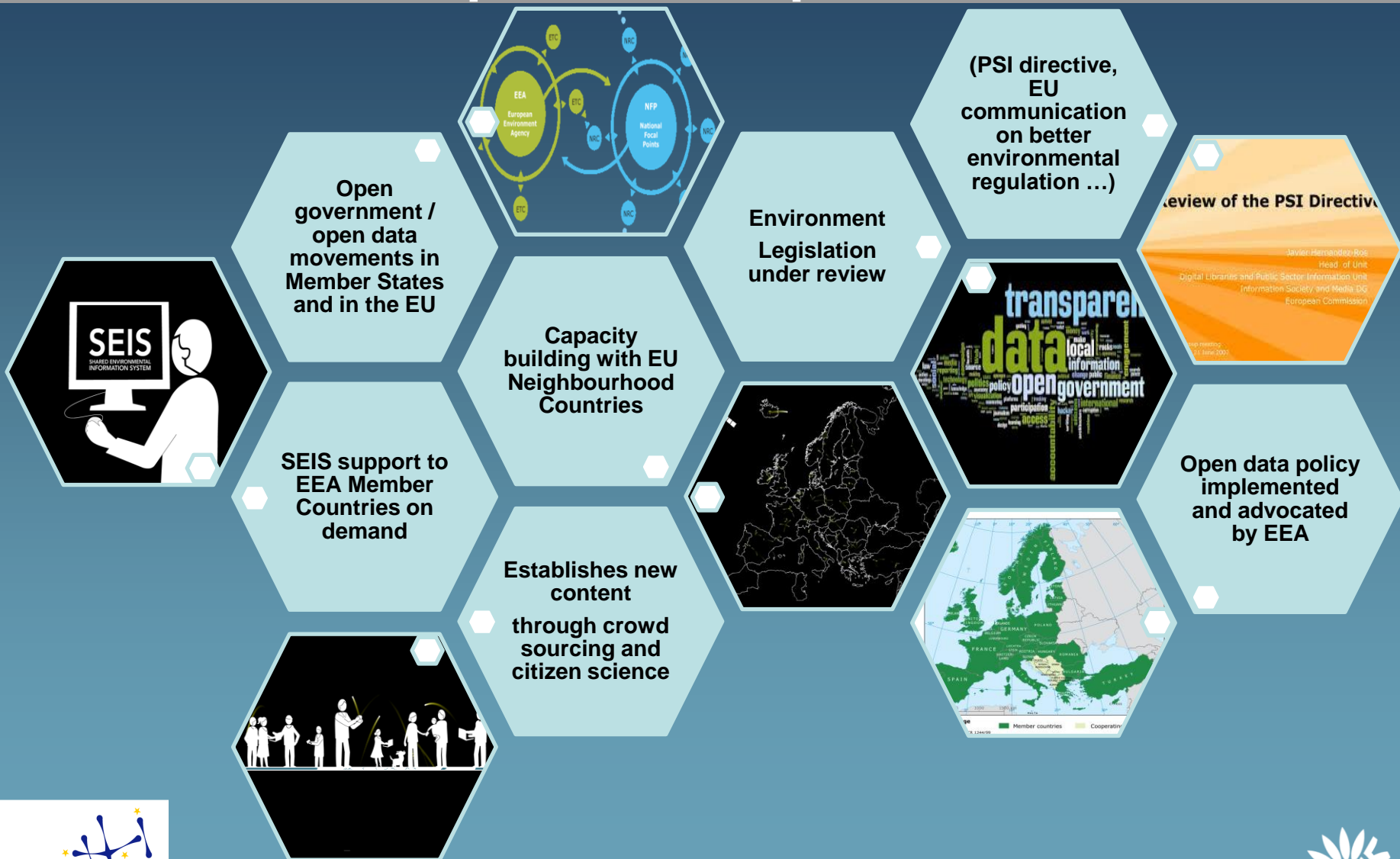
Improve data discovery

Integrated more dataflows into Reportnet

Introduce citizen science technologies



WHO is sharing SEIS pillar “cooperation”



SEIS implementation in countries

Stakeholders	Why?	What ? (content)	How? (infrastructure)	Who? (cooperation)
EU	policies	Environmental compliance	INSPIRE Copernicus	Member States
EEA	Improve Assessments & reporting	Reporting activities	Indicators SENSE	EIONET
Member States	Streamline & implement	Reporting obligations	Data flows CDR	National and local authorities
ENP	Harmonise and improve	Water, air, waste	AoA, SOER, REPORTNET	Env. & statistics
CA	Build trust cooperation	Water, air	AoA, SOER	MoE, water bodies
Pan-European	Monitor the environment capacity building	Regular reports	CSI, SOER, AoA	UNECE members EIONET
Global	interoperability	Data policy standards monitoring	UNEP/Live	ISO, GEOSS, OGC,



WHY to share data societal benefits and challenges

- Literature study identifying the benefits of:
 - Data sharing in general
 - Eye on Earth initiative in particular
- Based on peer and non-peer reviewed (semi) scientific literature on data sharing, limitations to quantify results



Benefits for data collectors and data processors 1/2

- Exploitation of economies of scale:
 - Improved efficiency and cost effectiveness
 - Wider range of production and services
 - E.g. data is available to smaller agencies and jurisdictions that could not otherwise afford it
 - **improves the quality of service**
- Reduction of redundancy and costs
 - Less duplication in data collection e.g. repeated use of data
 - New and innovative ways of using data
 - **increased production potential**
 - Barrier free access to the data increases benefits e.g. simple user licenses



Benefits for data collectors and data processors 2/2

- Less costs

E.g. In Catalonia local public administration accrued savings through regional spatial data infrastructures

internal efficiency benefits (time saved in internal queries by technical staff, time saved in attending queries by the public, time saved in internal processes) over 500 hours per month, 2,6 million euros per year

effectiveness benefits (time saved by the public and by companies in dealing with public administration) savings around 2,6 million euros per year

➔ total investment costs (setting up data infrastructure and developing it over 4 years) was covered in 6 months



Benefits to users in general



- Societal benefits: e.g. disasters, health, energy, climate, ecosystems, agriculture and biodiversity
- “Wealth of nations” = natural and environmental resources
- “Benefits can be derived from the valued we hold for what the information is about”
- **Information on natural wealth can help us better manage, enhance, preserve, protect and use this wealth**



Benefits for science



- Reinforces collaborative and cumulative processes involved in creating scientific knowledge
- Promotes new research and enables testing new /alternative hypothesis
- Increases the transparency and accountability of research
- Increases financial return on research investment



Benefits for the environment

- **Improved understanding** on environmental dynamics better management and development of weather-, climate- and environment-sensitive sectors
- Better forecasts and risk management e.g. coastal, storms, floods, crop yields
- Improved understanding of environmental factors affecting human health and well-being e.g. disease tracking and prediction
- Better coping with environmental issues/natural disasters, reducing loss of life and property
- Better natural and energy resource management



- Better natural and energy resource management

E.g. savings in energy costs

Cold and hot weather will increase energy demand

Accurate weather forecasts can help companies to make decisions how to meet the increased demand

E.g. floods

Prevent costly damages on infrastructures (energy pipeline and railroads) and buildings in vulnerable areas



Benefits to policy makers



- Public information services, management and decision making
- Relationships between organisations involved in joint database activities
- Confidence in the accuracy and relevance of public sector information
- Better policy making and policy implementation
 - E.g. environmental reporting, impact assessments
- Efficiency and effectiveness of policy responses



Benefits for business opportunities

- Better and accurate analysis of different markets
- Greater competition
- **Creation of new products and services**
- New business development
- Easier to compete outside the home market



General challenges of data sharing

Cooperation suffer restrictions due to security and sovereignty issues, **lack of consistent political and fiscal support**

Science related data is often not made public due to concerns on plagiarism, intellectual property rights, misbelief on data ownership, authorization to publish the data, fear of data being used for incorrect purposes

Data quality: often only fragmented data sets provided

Awareness raising of the benefits of shared data



Benefits of sharing data through EoE

Benefits	Eye on Earth
Exploitation of economies of scale	<p>(+) Providing data and software (maps and map-based apps) to present data -> available also to smaller institutions (+) Quality checks on data</p>
Reduction of redundancy and costs	<p>Lack of scientific literature on: (-) how often governments rely on EoE datasets to fulfil their legal obligations (-) knowledge about the availability of the dataset and its accessibility</p>
Direct and indirect benefits to users in general	<p>Lack of information on: (-) how many consumers use actively EoE to make decisions (-) how many governments, NGOs and other companies use EoE dataset in their decision making</p>

Benefits of sharing data through EoE

Benefits	Eye on Earth
More and better scientific research	Data quality is important: (+) EoE checks data quality and ensures proper metadata (-) difficult to find correct data with expanding amount of (types of) data (-) access to raw data (-) awareness of the availability of the data?
Improved understanding of environment and better resource management	(+) Improves understanding of environmental issues and provides information for resource management
Better coping with environmental issues	(+) Information on acute environmental crises (+) Basic infrastructure available to adjust the data in the interactive maps in real-time (-) Importing data in the graphs requires specific data format – not feasible at short notice? (-) time is crucial – is EoE most suitable to deliver the information in crisis situation?

Benefits of sharing data through EoE

Benefits	Eye on Earth
Better policy making and implementation	(-) difficult to evaluate if benefits materialize due to lack of studies available
New business opportunities More knowledge on business opportunities	(+) (+) Businesses can use data from EoE to identify new markets or potential consumer needs (+) Check on the quality of data ensures certain level of quality of information (+) large geographical scope (-) Success depends on the awareness of the availability of data (-) Is specific data easily found? Access to raw data?

To conclude on the findings

- Benefits often very general (qualitative) and though hard to quantify
- EoE is generally well positioned to provide the benefits related to data sharing
- Awareness of potential EoE users and whether they can find and extract the relevant information has to grow
- Cost benefit value for the user has to be better assessed

