



MIS-ETC Code 166

„Joint Risk Monitoring during Emergencies in the Danube Area Border“

Workshop: „Air Quality in the Danube Border Area“
17/05/2012

SHARED ENVIRONMENTAL INFORMATION SYSTEM (SEIS)

Name SURNAME: Adrian VINTILA
Company/organization name: ICMET CRAIOVA
Address: Bdl.Decebal, no.118A, Craiova, Romania
E-mail: adrian_vintila@icmet.ro

Name SURNAME: Dumitru SACERDOTIANU
Company/organization name: ICMET CRAIOVA
Address: Bdl.Decebal, no.118A, Craiova, Romania
E-mail: dumitrusacerdotianu@yahoo.com

Name SURNAME: Iulian HUREZEANU
Company/organization name: ICMET CRAIOVA
Address: Bdl.Decebal, no.118A, Craiova, Romania
E-mail: iulian_hurezeanu@yahoo.com

Abstract:

Public authorities of EU Member States have many obligations related to reporting environment data and information. In Europe, these are analyzed, exchanged and used for multiple purposes. One use is that of supporting the policy makers from EU, Brussels, for developing and applying the environment policies and then to assess if these ones generate effects or not. Another use is to support the national authorities in getting ready for emergencies, like accident management. Environment information is also necessary for allowing the citizens to influence the environment policy. The Shared Environmental Information System (SEIS) is aimed at creating throughout Europe a decentralized, integrated and web-active system, based on a network of public information suppliers which exchange environment data and information. SEIS is an initiative for modernizing and simplifying the collection, exchange and use of the data and information necessary to develop and apply the environment policy. For making SEIS possible, one key condition is passing from information "control" to information "exchange", as free as possible.

Key words: System, shared, information, environment, SPIM

www.cbromanialbulgaria.eu

Investing in your future!

1. INTRODUCTION

The nowadays challenges related to environment, like adaptation to climatic changes, management of ecosystems and natural resources in a sustainable manner, protection of biodiversity, prevention and management of environment crises like floods, forest fires and water scarcity depend on the assessment of the data coming from a variety of sectors and sources. That is why it is absolutely vital for European Union to have an information system based on the latest information and communication technology (ICT) which will provide real time data on the environment to decision makers at all levels (from the local one to the European one) , thus allowing them to make immediate decisions.

The communication of European Commission [1] proposes an approach for modernizing and simplifying the collection, exchange and use of information and data necessary for developing and implementing the environment policy, according to which the present reporting systems, most of them centralized, are progressively replaced by other systems based on access, sharing and interoperability. Firstly, communication proposes a series of principles on the basis of which the collection, exchange and use of information on environment should be organized in the future. Such revision will also allow the immediate abrogation of a small number of obsolete reporting requirements and will lead to simplification and modernization.

Shared Environmental Information System (SEIS) [2], [3], [4] is a cooperation initiative of European Commission and European Environment Agency (EEA) for setting, together with the Member States, an integrated and shared environmental information system at EU level. This system will better connect the collection of existent data to the information flows related to EU policies and environment legislation. This will be based on technologies like internet and satellite systems, and makes the environmental information more accessible and easier to understand for the political and public decision makers.

The basic goal of SEIS is also to move the reporting far away from paper, based on reporting to an information system, where the information is managed as close as possible to the source and made available to the users in an open and transparent way. According to SEIS concept, information will be stored in electronic databases throughout European Union.

2. SEIS NEED

In Europe, sharing of environmental information has an old history. The environmental information systems have been used with good results for supporting the process of reporting, by the Member States, the implementation degree of the Community legislation on the environment and, more recently, for supporting different processes of determining the environment indicators based on the political orientations set by EU and Member States. Although, today we must face the new challenges regarding the priorities of the 6th PAM - more precisely, adapting to climatic changes, stopping the biodiversity loss and managing the natural resources - which will require an even more efficient use of the existent information by us. The recent experience regarding the climatic changes confirms the need of reliable information on environment, which should be rapidly and easily available.

The timely, reliable and relevant information related to the environment condition is essential for developing a “healthy” policy. The policy makers and the public need to know early the way in which the climate changes, whether Europe waters become cleaner or more polluted, the way in which nature reacts to pollution and soil use change, and whether policies are efficient. This information should be made available to all, in a manner in which everybody could understand the changes on environment and their impact.

More than 70 from a few hundreds of articles from the environmental legislation in force in European Union require Member States to report specific aspects of the environment from their territory. At present, this wealth of information is not available in a timely manner, and not found in a format that policy makers and public could easily understand and use (Figure 1).

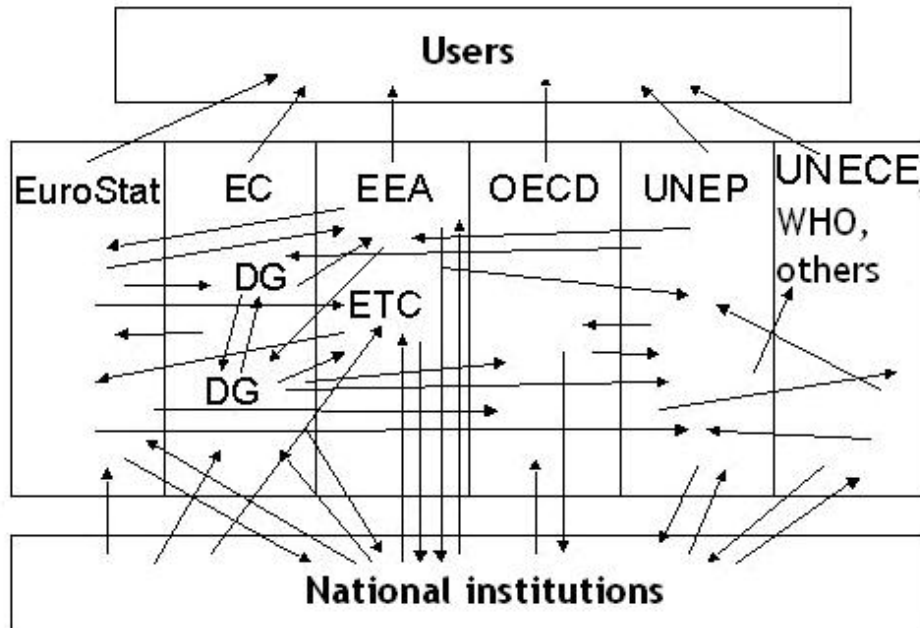


Figure 1. Present shared reporting system

Legend:

- Eurostat - Statistical Office of the European Communities
- EC - European Commission
- DG - Directorate General
- EEA - European Environmental Agency
- OECD - Organization for Economic Cooperation and Development
- UNEP - United Nations Environment Program
- UNECE - United Nations Economic Commission for Europe
- WHO - World Health Organisation
- ETC - European Topic Centre

For better managing and communicating the abundance of the collected environmental information, European Commission proposes to create a Shared Environmental Information System (SEIS) (Figure 2).

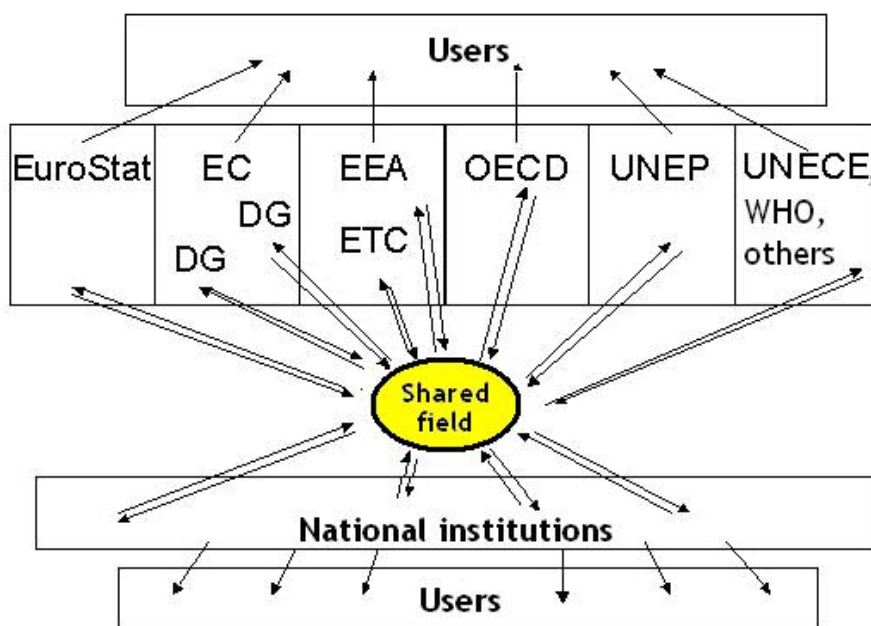


Figure 2. Information sharing in the Shared Environmental Information System

Once there is a Shared Environmental Information System, all the interested parties may efficiently benefit from the information from the shared field.

3. PRINCIPLES WHICH ARE SEIS BASE

The basic principles of the shared environmental information system are the following:

- information must be managed as close as possible to its source;
- information must be collected only once and shared between interested parties for being used in different purposes;
- information must be rapidly accessible to public authorities for allowing them to fulfill easily the reporting obligations provided by law;
- information must be rapidly accessible to final users, firstly to public authorities at all levels, from local to European level, for allowing them to evaluate in time the environment state and the efficiency of their policies, also to develop a new policy;
- information must also be accessible for giving the possibility to the final users, public authorities and citizens, to make comparisons at appropriate geographical scale (for example, at the level of countries, cities, basins) and to significantly participate in developing and implementing the environmental policy;
- information must be entirely available to general public, at national level and in the corresponding language(s), after carefully examining the adequate level of data compilation and subject to constraints related to confidentiality;
- information sharing and processing must be done by means of the programs „open-source“.

These principles are the result of a lot of experts' studies and analyses along many years. Their purpose is to guarantee that the information regarding the environment is organized as efficient as possible and to guarantee that investments in progress related to the surveillance and other processes of information collection are as efficient as possible as regards the use of the got data.

4. ADVANTAGES OF SEIS IMPLEMENTATION

4.1. Simplification and efficiency

While the benefits of a political commitment in favor of SEIS principles are beyond the simplification itself, they assure the conceptual frame necessary for simplifying the present reporting and monitoring obligations.

An essential step in implementing the SEIS approach will be the modernization of the legal provisions regarding the way in which the information necessary to Community legislation is made available. By suppressing the reporting on paper, the process of making available the information will be simpler, more flexible and more efficient.

If there is also a political commitment in favor of SEIS principles, such proposal will lead to additional advantages related to simplification, as regards:

- content of exigencies regarding the information necessary in the environmental thematic laws;
- reporting content and procedure at international level;
- more efficient organization of the activity of data collection in the Member States.

By allowing the more efficient use of available data, SEIS will facilitate the rationalization and prioritization of the requirements related the information, provided at present in the environmental thematic legislation. Probably this will have effects also on international agreements. Finally, as regards the costs, the analysis indicates the fact that some of the biggest savings could be done by efficiently improving the activities of data collection in the Member States. A more pronounced harmonization and prioritization of the monitoring activities organized at national and regional level would have, no doubt, a higher usefulness in improving the efficiency of present investments.

4.2. Better regulation, better policy

Reduction of the administrative burden should be planned so as to lead indeed to an improvement and not to a deterioration of the public policy and regulation quality.

Political commitment in favor of SEIS principles will help to reaching this goal, allowing the efficient exploitation of the available data. Taking into account that environmental data and information are likely to be used by a high number of actors, in many purposes, we may expect that the improvement of the mechanism of data collection, exchange and use leads to a significant increase of using the environmental data, together with an important diminution of the costs for the users. This will improve the efficiency of environmental policy during the whole program, including for instance the adaptation to climatic changes, biodiversity protection, water resource management, crisis prevention and management.

4.3. Citizen involvement

Besides the advantages related to the administrative simplification and better regulation, the commitment in favor of the principles previously stated will help also to the implication of European citizens, putting at their disposal, in time, relevant information, giving them the possibility to make informed decisions on the environment in which they live, inclusively to act correspondingly in emergencies and to influence the public policies. Supply of the information the citizens need, presented in their language, will stimulate also their re-employment in the European project.

4.4. Benefits from technology

SEIS will benefit from the possibilities supplied by the information and communication technology for putting into practice the principle **“Monitor once for timely and multi-purpose uses”**. This will enable that real-time data to be made available to decision-makers and allow them to make immediate and life-saving decisions. SEIS will allow data to be seamlessly combined with information from various sources and thus quickly perform cross thematic and cross-sector analyses that EU environmental policy requires. Action can then follow based on the results. Informing the public on air quality by using the color significance is also possible by accessing some web pages [6], [7]. Information can be got from automatic stations for air quality monitoring, which are integrated into this system.

5. PRESENT EFFORTS FOR BUILDING SEIS

At European level, diverse initiatives contributing to SEIS principle implementation were taken:

- Lately, European Commission has proposed or is working to drawing up some measures leading to the substantial rationalization of the legislative requirements on reporting. Among the already proposed measures there is the thematic strategy regarding atmospheric pollution (**CAFE**);
- Present evolutions within the context of the environmental thematic legislation recognize more and more the necessity of adopting a more modern approach of the generation, exchange and use of data and information;
- Directive 2007/2/CE for establishing an infrastructure for spatial information in European Community (**INSPIRE**) was adopted in March 2007 and contains provisions which aim at improving the accessibility and interoperability of spatial data;
- Directive 2003/4/CE regarding public access to environmental information (**directive Aarhus**) gives the citizens the right to access the environmental information hold or produced by public authorities, and also to the information related to adopted policies or

taken measures, or related to the people health and safety if these could be affected by the environment state;

- Initiative of Global Monitoring for Environment and Security has as objective providing services of operational information based on Earth monitoring data coming from satellites and in situ observations performed on water, air and soil ;
- Both the Community and the Member States are full members of the Group on Earth Observation (GEO), having as objective building a Global Earth Observation System of Systems (GEOSS) and therefore they are obliged to observe the data interoperability and sharing principles promoted by GEO;
- An **European Marine Observations and Data Network** will be created;
- Different research or other nature activities funded by the Commission are focused on the open distributed systems for environment management. Among these, there are research framework programs, **eTEN**, **eContent** and, lately, the policy support program, **PCI**;
- European Environmental Agency, by means of the European Environment Information and Observation Network (**EIONET**), plays an essential role in collecting and supplying environmental information.

Besides these European initiatives, different initiatives at national, regional and local level help also to concretizing SEIS:

- In Germany, an environmental information portal (**Portal U**), which covers some hundreds of thousands of internet sites and databases belonging to public institutions;
- In Ireland, the tool **The North-South Share Risk Assessment Reporting Tool**, which contains an interactive map and a database system which could be used both by the public and the specialists;
- In the Netherlands, **portal RIVM** for specialists in environment field;
- Austria has as objective reaching an electronic reporting of 100% , being already successful in reporting all the data required by EEA;

CONCLUSIONS

- For better managing and communicating the environmental collected information, European Commission proposes to found a **Shared Environmental Information System (SEIS)**;
- At European level, seven principles were drawn up for SEIS, guaranteeing that environmental information is organized as efficient as possible and is accessible for the whole community;
- Within the environmental international conferences, the measures necessary for creating SEIS were set;
- Once a Shared Environmental Information System will be implemented, all the interested parties may benefit in real time from the information from the shared field, thus being prepared to act efficiently to climatic changes or natural or man made disasters.
- Infrastructure of the data acquisition, processing and transmission system has a centralized architecture, with stations and servers in a closed network, so as to assure the data security and transmission, according to SEIS requirements.

BIBLIOGRAPHY

- [1] <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0046:FIN:RO:PDF>
COMUNICAREA COMISIEI CĂTRE CONSILIUL, PARLAMENTUL EUROPEAN, COMITETUL ECONOMIC ȘI SOCIAL EUROPEAN ȘI COMITETUL REGIUNILOR - Către un sistem partajat de informații referitoare la mediu (SPIM)
- [2] <http://ec.europa.eu/environment/seis/index.htm>
- [3] <http://ec.europa.eu/environment/seis/links.htm>
- [4] <http://ec.europa.eu/environment/seis/library.htm>
- [5] <http://nfp-bg.eionet.europa.eu/>
- [6] <http://www.eea.europa.eu/maps/ozone/map>
- [7] <http://network.eyearth.org/home/>