

REPORT

on the results of the work completed by the Task Force on Tools and Guidelines
(to be submitted to the Ad Hoc Working Group on Environmental Monitoring
of the Committee on Environmental Policy of the UN Economic Commission for Europe)

Background

The Task Force on Tools and Guidelines was set up at the end of 2001 based on the initiative of the Ad Hoc Working Group on Environmental Monitoring of the Committee on Environmental Policy of the UN Economic Commission for Europe with the aim to develop recommendations as to a) development of common standards and formats b) improving data compatibility to facilitate data transfer and use c) creating a harmonized meta-database with data sources and data sets, institutes, reports and other information products d) compiling a multilingual environmental thesaurus e) standardization of on-line national reports on the state of the environment f) working out guidelines on linking relevant national and international web-sites. The activities of the Task Force were drawing on the previous work carried out by the UN Division of Sustainable Development, the UN Statistical Commission, OECD, UNEP, ECE, EEA and other bodies. The financial support to the work was provided by the National Environmental Research Institute of Denmark.

The Task Force includes experts from the NIS (the list is attached) proposed by the members of the Ad Hoc Working Group and representatives of the European Environmental Agency and NERI. The first meeting of the Task Force was organized during the meeting "Information technologies in environmental monitoring and assessment" (7-8 February 2002, SPA "Typhoon", Obninsk)

Main results of work

The activities completed since the February meeting of the Task Force include:

1. Using the prepared questionnaires and with involvement of the NIS experts, information was gathered about the composition of environmental data and organizations responsible for preparing and submission of such data in NIS

Unfortunately, information supplied is rather limited. The experts failed to provide key information such as data about organizations in charge of gathering data, establishing and management of environmental databases.

In the emerging situation the Task Force had to take actions to explore other additional ways of learning what environmental databases are available in the NIS. One of the options was using national services of scientific and technical information existing in NIS. As a result, an agreement was concluded with the International Center for Scientific and Technical Information (ICSTI, Moscow) stipulating under which terms the Task Force will get access to the information supplied to the ICSTI within the international program "Quality of Human Habitat".

At the same time, information on organizations-sources of environmental data and access to relevant databases in future can only be ensured provided the NIS agencies and organizations responsible for national environmental monitoring systems are involved.

2. Analysis of the principles underlying the software and information support and organizational and operational requirements of EIONET was carried out from the standpoint of integration of NIS information support systems into EIONET and costs to be incurred in execution of this task.

Updating and development of national information support systems relating to environmental monitoring and assessment in NIS based on the EIONET guidelines and technical solutions (facilities) would help render them state-of-the-art, both in terms of the content and facilities. The requirements to the content and organization of data, software, access to data etc are not inconsistent with those of the EIONET.

The integration of the NIS information support systems relating to environmental monitoring and assessment into EIONET will require that the involved environmental agencies address the issues of coordination of activities of international organizations carrying out projects on information support across NIS. In particular, it would be appropriate if provision of environmental information to state organizations be dealt with in collaboration with the EEA based on the EIONET technology.

3. The functionality of the current version of EIONET was studied and some of the EIONET software tools were tried out as part of development of components of information support systems for environmental monitoring and assessment; demos were prepared to illustrate their possible applications

With a view to establish an infrastructure for environmental monitoring data exchange in Europe between the NIS and the EEA, the following activities were given priorities and completed:

- The state of affairs regarding environmental data exchange at the European level was analyzed including the EEA role in this process and operation of EIONET, the EEA being its core.
- The presentation of data and information on the EEA and EIONET websites was studied with respect to the following areas: transboundary air pollution, climate change, atmospheric air quality, ozone layer depletion, controlled natural zones and areas, quality of surface inland water, marine environment, remote sensing of earth surface, local soil contamination, waste incineration
- The programming product WinCDS (Catalogue of Data Sources organized as a database MS ACCESS) developed by the European Thematic Center has been installed in SPA "Typhoon" as a tool for integration and management of meta-information in environmental monitoring. For indexation and meta-information search the WinCDS uses the multilingual thesaurus GEMET.

Efforts are being continued to gather meta-data about organizations possessing information on environmental monitoring and nature protection and data sources per se. About 50 records were entered containing mainly meta-information on databases with environmental data and information. Approximately the same number of entries concern organizations in Russia and several other NIS countries dealing with environmental issues. The entries are both in the Russian and English languages. Together with the EEA specialists the collected meta-data are placed on the SPA "Typhoon" web-site.

A prototype web-site was set up for presenting information about the quality of atmospheric air in the territory of Russia and other NIS countries. As of today, the web-site contains information on air contamination and air quality, as published in the annual book "The State of atmospheric air contamination in the cities of Russia in 2000" and "Report on the state of the environment of the Republic of Kyrgyzstan in 2000".

The results of the undertaken study and tests provide a basis for maintaining that the application of the EIONET technologies and tools in the NIS information support systems will be conducive to their development and better integration into the EIONET.

Conclusions

The results of the works of the Task Force were discussed at the meeting held on 9-11 December 2002 in SPA "Typhoon", Obninsk. The meeting considered some priority needs and problems relating to the use of electronic facilities and developed the recommendations on future actions to be taken as part of the development of the NIS information support systems using

information and telecommunication technologies. The Task Force concluded that future efforts should focus on the following:

- consideration and analysis of the needs of authorities and organizations in charge of environmental monitoring in terms of access to environmental information in e-form;
- development and execution of concerted approaches and facilities for receiving, preparation and dissemination of environmental information across the NIS on the base of the EIONET available technologies into EIONET, including a user friendly interface for getting access to environmental information;
- expanding the capabilities of state authorities in using electronic facilities for receiving environmental information of interest.

The proposed activities can be undertaken as a full-scale international project with the support of the UN Economic Commission for Europe, the European Commission and the EEA. Efforts under such a project should be harmonized and targeted at three structural levels of environmental monitoring and assessment information support systems.

- *The level of environmental observations.* Unified requirements to the design of observational networks and the content of observational data are to be determined, including data required for implementation of international conventions on environmental issues. Methods of sampling and measurements need to be agreed on. Common requirements to organization of databases and protocol for getting access to observational data should be developed.
- *The level of environmental indicators.* A unified set of key indicators for the current and prognostic state of the environment is to be developed. Methods to be used for calculating environmental indicators based on observational data and computer modeling of processes occurring in the environment should be made consistent. The indicators and technologies of the EIONET are to be used for this purpose.
- *The level of presenting environmental information and decision making support.* A common system is to be established for navigation and accessing state-level information resources in the NIS using the Catalogue of Data Sources (CDS) and the multilingual thesaurus (GEMET) of the EIONET. A list of common information materials (reports, statements etc) and formats for e-presentation are to be specified. An order should be prescribed for submission of products developed with common information materials and for their storage in the Centralized Data Repository (CDR) of EIONET. A framework should be set up for continuous sharing of experience gained in implementation of decision making procedures and for assistance in adaptation of these procedures in the NIS with allowance for the existing system of environmental management

General recommendations

Efforts towards expanding the use of electronic facilities, development and implementation of common communication strategies in the NIS information support systems related to environmental monitoring and assessment should meet the following goals:

- Facilitation of wider use by decision-making bodies (at all levels) of electronic facilities for receipt, preparation and dissemination of environmental information.
- Development of methods and implementation of procedures for analysis of information needs of authorities and state organizations in order to identify priorities in preparing databases (information materials) and programming tools for handling e-information on the state of the environment.
- Promoting use of Internet by environmental authorities to ensure feedback with interested parties.
- Setting up information centers at Ministries and local authorities and designating focal points (thematic centers, reference centers etc) ensuring users' access to environmental information and responsible for publication (supply) of information and its quality.

- Developing web-sites with overview of environmental information services (integrated national portal) and tools for search of environmental information and data/information sources (meta-databases/ catalogue of information sources of state organizations, search tools).
- Involvement of specialized scientific and technical information services into development and use of electronic facilities with respect to preparation and dissemination of environmental information.
- Organizing free of charge access to e-information on the state of the environment for authorized users.
- Improving up-to-dateness of environmental information in e-form
- Providing technical assistance to a number of NIS countries by the UN Economic Commission for Europe, the European Commission and the European Environmental Agency in the form of supply of necessary computer hardware and software required for establishing national (state) portals of environmental information
- Centralized and individual training of NIS specialists with respect to application of provided software and setting up environmental web-sites (portals)
- Involvement of NIS experts, including those from the Task Force, as observers, in activities of specialized groups and in meetings relating to operation and development of EIONET.
- Working up some software tools of EIONET, in particular WebCDS, for use in the Internet environment.