

## **Improving Access to Environmental Information– The CEROI Programme**

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### **Abstract**

UNEP/GRID-Arendal in Norway has for several years been assisting countries in the creation of national State of Environment reports. Sustainable development in cities is of crucial importance for the development for the global environment. Cities Environmental Information on the Internet – the CEROI Programme was created in this context.

The CEROI Programme has been developed within the framework of Local Agenda 21. A sustainable local environment policy requires knowledge and easily accessible environmental information for politicians, administrators and the citizens. The CEROI Programme provides city authorities with an efficient tool to produce and present a report on the urban environment on the Internet. It includes a template with standard indicators and tailor-made software for easy presentation of advanced maps, graphs, text and images on the Internet.

The main objective of the CEROI Programme is to bring together a network of cities that want to make information about their environment available on the Internet in an easy-to-understand, well-structured and internationally comparable format. Through the CEROI network, cities can share their experience in the field of urban environmental management and compare information about the management of similar environmental problems around the world.

The SoE report should be used as a tool for steering development in cities in a sustainable direction. The city SoE template designed for the CEROI Programme recommends structure, priority issues and indicators. Additionally, a CEROI secretariat has been established at UNEP/GRID-Arendal to promote, develop and facilitate the network of CEROI cities.

### **1. Improving Access to Environmental Information – The CEROI Programme**

Agenda 21, adopted at the 1992 UNCED Earth Summit conference in Rio de Janeiro, specifically calls for improved environmental information for decision-making, environmental education and awareness raising. At the Summit, world

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leaders signed a global environment and development action plan involving citizens in cooperation with their local government to develop a sustainable strategy at local level, its own Local Agenda 21.

Furthermore, the Århus Convention of 1997 leads in a similar direction by aiming to guarantee the rights of public access to environmental information and public participation in decision-making. It also affirms the need to ensure sustainable and environmentally sound development.

Cities Environment Reports on the Internet (CEROI) has been developed within this framework. Its purpose is to facilitate access to environmental information for sound decision-making and awareness raising in cities, both locally and worldwide. Traditionally, city-based environmental data can be fragmented and accessible only to a few people. Access to environmental information is crucial for ensuring relevant policy, responses and building public awareness and empowering urban stakeholders. There are numerous projects all over the world to collect environmental information, develop internationally accepted indicators and evaluate policies for sustainable development. The CEROI Programme therefore aims to put this environmental information to work by providing a concept for easily creating environment reports on the Internet.

### **1.1 Putting Environmental Information to Work**

A sustainable local environment policy requires knowledge and easy access to environmental information for politicians, administrators and citizens. The CEROI Programme aims to bring together a network of cities that want to make information about their environment available on the Internet in an easy-to-understand, well-structured and internationally comparable format, thus having a positive impact on the urban environment by improving access for citizens and policy-makers to reliable and easily understood information over the Internet. The CEROI Programme provides city authorities with an efficient tool to produce and present a report on the state of the urban environment on the Internet, one that allows regular monitoring and communicates environmental information to all citizens and demonstrates the commitment to sustainable development. It also highlights the environmental achievements in the local area and shows what still needs work. However, the content of each environmental report will depend to the certain extent on available data. If data for some suggested issues or areas are not available, the report can be used to identify and fill such information gaps.

The CEROI State of Environment (SoE) reports are template-based with suggestions for standardised presentation of themes, issues and indicators, including a help system to guide users through the creation of SoE reports. The use of indicators is encouraged to make the report more credible, convincing, and easier to read. Work with the template is facilitated by Publikit<sup>®</sup> tailor-made software for easy presenta-

tion and maintenance of maps, graphs, images and text. The software also facilitates publication of the cities' SoE reports on the Internet.

The reports can be readily accessed on the CEROI gateway, which is located on a central server at the GRID-Arendal office. The site functions as a global gateway to urban SoE reports. It also provides a meeting place for discussion, exchange of experience and information as well as presenting information on how to produce SoE reports and urban environmental indicators. The gateway provides for simple comparisons of key information in all published CEROI reports, makes it possible to monitor global trends and read about local responses to urban environmental problems. In addition to this, the CEROI Programme secretariat and the CEROI network assists cities in disseminating their information efficiently.

## **1.2 The Pilot Phase**

The CEROI Programme was initiated by UNEP/GRID-Arendal, Norway in 1996. Ugland Publikit, a private-owned company, was selected to develop the software tool for CEROI, Publikit®. An advisory committee composed of leaders from UNEP's Regional Office for Europe, the European Environment Agency (EEA), the Healthy Cities Project of the World Health Organisation (WHO), the Global Urban Observatory of UNCHS/Habitat and the International Council for Local Environmental Initiatives (ICLEI) was established to guide the development of the concept. Close contact was also established with other international organisations like the World Bank and the OECD.

Over 20 pilot cities worldwide were involved in the continuous evaluation and improvement of the tools and templates during the pilot phase (1997-1999), for example as Moscow, Prague and Tbilisi. On August 23, 1999, the UNEP Executive Director Klaus Töpfer, and the WHO Director-General Gro Harlem Brundtland launched the first Internet reports for the cities of Arendal, Norway and Turku, Finland. In October, the Minister of Environment of South Africa launched the Internet reports for the cities of Johannesburg, Pretoria, Durban and Cape Town.

## **2. The Template and the Software**

The CEROI Programme provides easy-to-use software with templates based on 'best available' urban environmental indicators that make it a simple matter to create a professional SoE report on the Internet. The CEROI software Publikit® is a state-of-the-art tool to help cities create their own SoE reports. It is a complete web-publishing tool to design and maintain Internet sites without in-depth knowledge of programming or design skills. The software's technology makes it user-friendly and flexible for publishing complex reports on the Internet, providing all essential tools and resources behind an intuitive user interface.

## 2.1 The template

The CEROI template provides a site and document structure, graphical layout and framework for the SoE report. The template is, however, flexible enough to adapt to the needs and priorities of each individual city in the way information is presented, themes and indicators are selected and the internal structure is elaborated. The report structure is automatically set up with help of the CEROI wizard, which helps to determine the report content according to city-specific information. The software's site structure module visually structures the web project in several ways. This permits easy navigation between pages and inspection of the links between them.

Regardless of the issues and indicators the city chooses to use, the template will accommodate them. Many of the issues are already included in the template together with basic elements needed on the report pages. There is also room in the template for highlighting important items, including news, frequently asked questions, links to other resources, contacts, and other complementary information. The template offers environmental, design and programming help on how to complete each page. The presentation of individual issues within the SoE report follows the DIPSIR model (Driving forces-Pressure-State-Impact-Responses). The model is widely used for preparing environmental assessment reports in a logical and efficient format and allows easy comparison of key topics.

The CEROI template also includes core indicators and proposed indicators for use within specific themes. Indicators in the context of a state of the environment report are representative, concise and easy-to-interpret parameters, which are used to illustrate main features of the urban environment and their development over time and space. The indicators are based on UNCHS (Habitat) indicators and the OECD core set of environmental indicators. The selection of indicators and pilot cities was closely co-ordinated with the Cities 21<sup>®</sup> of ICLEI. These indicators will be accessible and comparable both through individual city reports and through the CEROI server. It has been a challenging assignment to decide on the core set of indicators for the CEROI Programme. The CEROI Programme will continuously update its list of indicators as international practice changes and make them easily comparable on the CEROI gateway.

## 2.2 The Software

Initially, the Publikit<sup>®</sup> software was developed for environmental reporting on the Internet; the CEROI Programme and released in February 2000. The software consists of several tools and modules embracing the complete process of publishing on the Internet. Publikit<sup>®</sup> utilizes a comprehensive template and help system that allows uncomplicated design of web sites and web-based reports. Publikit<sup>®</sup> can be used for various template developments, not only in the area of SoE reporting but can be adapted to any area of interest. It can also be combined with other software pro-

adapted to any area of interest. It can also be combined with other software programs for user-friendly handling.

The HTML Editor is the central unit used to create content and layout of web pages. The editor is based on Microsoft technology to ensure full control over the layout and to obtain the functionality expected from a modern word processor and design tool. Additionally, the software offers full access and editing facilities for the Html source code of each web page for experienced web publishers. Creating a complete web-based report requires a lot of repetitive work, such as inserting headers and footers on every page of the project. Publikit® therefore carries out routine tasks by employing reusable objects, i.e. changing a piece of information will automatically update all relevant pages. Just like the CEROI template, Publikit® contains wizards that guide users through fairly advanced processes, such as publishing to the Internet, in straightforward steps as well as the site structure of the software module. The help system provides technical, thematic and design guidance on how to create web pages and Internet reports.

One of the software's key features is the powerful GIS function for handling vector and raster maps on the Internet. The map module provides an easy way of publishing dynamic, interactive maps on the Internet. The raster map engine displays raster maps and supports a layer of interactive graphical symbols. When inserted into a web page, the map engine makes the map come "alive" on the Internet. This allows the map to be panned and permits dynamic investigation of graphical information. The symbols can be grouped into categories and themes, and each symbol can be linked to an Internet page containing additional information. Vector maps are published using ArcInfo/ESRI technology, which permits optimal interactivity. Useful map explanations and hyperlinks can be added for in-depth information.

The graphics module of Publikit® includes image editing functions, handles the import, conversion and manipulation of graphics and images and automatically prepares images for Internet browsers. The software includes also database connectivity, creating tables, charts and graphs from existing data sources such as Microsoft Access databases or Excel sheets, or else from new data.

When the development of the report has been completed the Internet publisher module connects and transfers each file to an Internet server. The software also allows updating of individual pages and folders without any need to publish the complete project again.

### **3. Choice of Communication Channel**

The CEROI Programme decided to utilize the Internet. The Internet is a rapidly growing information channel that is readily accessible around the world. Published information can be easily updated, thus reducing the risk of outdated and invalid information. Publishing a SoE report on the Internet is a quality control itself, since

stakeholders will react if the information presented is not correct. Being on the Internet, the information is not only accessible to the city residents, but also to other cities seeking to manage similar environmental issues. Moreover, Internet publishing can improve the overall cost-efficiency of SoE reporting and make updating information in the report much easier. However, responses during the pilot phase requested CD-ROMS and hardcopies to complement the reports on the Internet.

#### **4. The Implementation**

Implementation of the CEROI Programme was started early in 2000 in co-operation with regional and international institutions and networks such as ICLEI, EEA, Habitat/Global Urban Observatory, Medcities and others. The CEROI secretariat has been set up to promote, develop and facilitate the CEROI network, publish a regular CEROI newsletter and organise sponsors' support for cities with very limited financial resources. The secretariat manages and maintains the web-based CEROI gateway for cities' SoE reports on the Internet. The CEROI gateway offers the CEROI members server capacity to store or mirror their SoE reports and includes a database for comparison of environmental issues and core indicators. Major efforts are being put into further development for integration of the CEROI Programme on a regional and national level in the environment and related issues such as health and water. The Publikit® 1.0 software was released in February 2000 and by March 2000, the eight first reports were accessible on the Internet: Cape Town, Pretoria, Durban, Johannesburg, Arendal, Turku, Moscow and Prague. Other international cities are preparing their SoE reports to publish on the Internet.

#### **5. Summary**

The CEROI Programme emerges as a tool to fill a gap in the global effort to improve public access to environmental information as stated in the Agenda 21, adopted at UNCED Earth Summit conference in 1992. The CEROI network gathers people from around the world to share information on urban environmental data, their experience and efforts. Members can signpost good environmental practice in their local community and promote their achievements globally. The two-way process of close cooperation, as promoted by Agenda 21, between the city authorities and the community uses resources most efficiently and demonstrates that achievements can only be scored through collaboration and generates enthusiasm for the common goal. The CEROI Programme is the complete tool for providing access to urban environmental information to raise public knowledge and consequently increase the mediation and participation necessary to ensure sustainable and environmentally sound development.