



# GRID-Geneva Quarterly Bulletin No. 4 - 2001

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UNEP/Global Resource Information Database-Geneva

## Partners Renew Support to DEWA~Europe/GRID-Geneva

In a ceremony attended by the heads of the United Nations Environment Programme (UNEP), the Swiss Agency for the Environment, Forests and Landscape (SAEFL) and the University of Geneva, the three partner organisations pledged their continued mutual support to GRID-Geneva for the next four years (2002-2005). UNEP's Executive Director Dr. Klaus Töpfer, SAEFL's Director Dr. Philippe Roch and the University of Geneva Rector Dr. Maurice Bourquin, signed the new "Partnership agreement" on Friday, 21 December 2001 at the Palais des Nations. This follows the original agreement which came into force in 1998. Swiss government officials, heads of UNEP units and global conventions, the media and other UN and University of Geneva and GRID staff also attended the ceremony.



Celebrating the renewal of the UNEP/GRID-Geneva "Partnership Agreement" at the Palais des Nations, from left to right: Dr. Maurice Bourquin, Dr. Klaus Töpfer, Ms. Elena Ponomoreva-Piquier, Dr. Philippe Roch, and in the background Mr. Ron Witt.

The signing was preceded by statements from Dr. Töpfer, Dr. Roch and Mr. Bourquin in which they praised GRID-Geneva's effectiveness in delivering high-quality and timely products and expressed their confidence in the Partnership's continued success. Appraising GRID-Geneva's role, Dr.

Töpfer said that it "provides UNEP with essential support in the areas of evaluation, communication and networking with organizations and programmes concerned with environmental monitoring". He cited the study on the disappearance of the Mesopotamian marshlands as one specific example of its highly-regarded

work on early warning issues.

For his part, Dr. Roch commended the GRID-Geneva partnership as "an excellent example of collaboration between the Swiss government, the organizations, Cantons and international organisations".

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## Planning for UNEP's Data Needs in the New Millennium

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An expert meeting on "Global/Regional Data Portals, Standards and Tools" was held in Geneva from 17-19 December, organized by UNEP's Division for Early Warning and Assessment (DEWA-Europe). The aim of the meeting was to review and clarify data issues underpinning UNEP's review of the global state of the environment, and to point the way forward for future access to and use of so-called "baseline / core" data sets in its assessment and reporting activities. The meeting was attended by regional members of the GEO-3 "Data Working Group (DWG)", set-up in early 2000 to formulate the GEO-3 data strategy, which includes representatives from all of UNEP's seven regions.

A wide range of issues were addressed at the meeting, most prominently the current status of efforts to work with core data sets and related Internet tools for accessing such data at global and regional levels within UNEP/DEWA and via its regional centres. Regional presentations provided a critical review on the use of baseline/core data

sets in the GEO-3 process, with interesting "lessons learned". This was followed by a demonstration of the GEO Data Portal, which was commended by participants for its development into a significant application and "core data" resource.

A lengthy session attempted to define what is the "core" set of data variables needed for UNEP/DEWA's assessments and reports, and how this could be linked with initiatives to develop sustainable development indicators. Other technical issues discussed included quality assurance and quality control for all data variables; carrying out data aggregation and dis-aggregation from sub-national up to global levels and vice-versa; dealing with copyrighted data which need to be made more generally available; and exploring opportunities for capacity building.

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## New Developments in Data Management Projects

### CDS Meeting

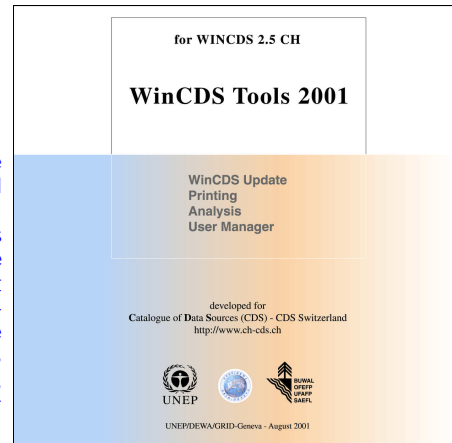
A major conference on environmental meta-data, the "CDS and e-EIONET Work Conference 2001" organized by the European Environment Agency, was hosted by the Swiss Agency for the Environment, Forests and Landscape (SAEFL) in Thun from 7-9 October 2001. The meeting provided a forum for the principal players in the European Environment Information and Observation Network (EIONET) and Catalogue of Data Sources (CDS) project to share experiences in the management of web-based information portals and environmental databases. GRID-Geneva gave an overview of the knowledge base it has accumulated over the past two years in developing meta-data updating procedures, within a system of decentralized information providers. A CD-ROM containing several tools developed for the Swiss-CDS

and Alpine-CDS projects had been prepared for the occasion, and was distributed to the meeting's participants. In addition, statistics detailing the utilisation of the Swiss-CDS were presented. With the data generated from the Log Analysis tool, it is now possible to monitor and analyse on a monthly basis the progression of visits to the CH-CDS website and the utilisation of the WebCDS application. Finally, the event also allowed participants to learn about related GRID-Geneva activities, namely "UNEP.net" and the GEO Data Portal, which were presented separately.

### Resumption of SOIA Activities

Monaco's assumption of the presidency for the System for Observation of and Information on the Alps (SOIA), has catalysed a move forward on this project, following an interim transition period. With

Developed to enhance the Swiss-CDS and Alpine-CDS applications, the new WinCDS Tools CD-ROM can be obtained on request from UNEP/GRID-Geneva. It contains the following tools: WinCDS Update, Printing, Analysis and User Manager.



the newly-affirmed commitment, the various activities carried out by GRID-Geneva on behalf of Switzerland's SOIA Working Group are now fully back on track. As such, the SOIA website (<http://www.soia.int>) and the Alpine Catalogue of Data Sources hosted by GRID-Geneva will be updated and completed by mid-2002. In addition, plans to develop a database on climate change

indicators in the Alps will also be reinitiated. To assist countries reactivate their respective SOIA activities, a Task Force meeting was held in Bern, Switzerland from 10-11 December. The first in a series of three meetings planned, the objective is to enable national delegations to finalise their outputs before the next Alpine meeting and the establishment of a permanent secretariat for the Alpine Convention.

## Earthwatch Working Party Meeting

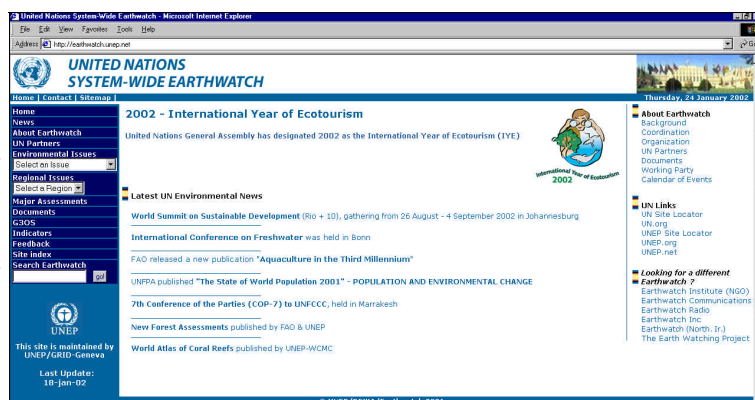
With a view to re-launching the System-wide Earthwatch, a meeting of the Earthwatch Working Party was convened on 10-11 December 2001 in Geneva. High on the agenda were discussions on agency preparations for the World Summit on Sustainable Development (WSSD) to be held in Johannesburg in August 2002. Other main issues included plans to harmonize global environmental assessments, a discussion on new and emerging issues, and quality check, coherence and standardization of scientific information available for decision-makers. Presentations of UNEP.Net (<http://www.unep.net/>) and of the new Earthwatch Website (<http://earthwatch.unep.net/>) were also made.

Key themes such as climate change, biodiversity, desertification, deforestation, water and sanitation, and air pollution were chosen as topics on which to collaborate and to carry forth to WSSD. In addition, Earthwatch would promote

linkages between agencies working on environmental information and assessment programmes in Africa in order to demonstrate the joint work of UN agencies.

Regarding UNEP.Net, UNEP would take the initiative of producing a summary of the information framework and metadata system being used as an example of a standards-based information system working directly with other UN Agencies and the United Nations Geographical Information Working Group (UNGIWG). Earthwatch partners would examine global environmental data sets and consider a common information framework to be used by agencies focusing on sharing of information through the website.

Through its website, Earthwatch has been informing and involving different agencies in exchanging information on



The new System-Wide Earthwatch website (<http://earthwatch.unep.net>) provides across-the-board information on UN environmental activities.

indicators initiatives. The objective is to highlight the benefits of sustainable development indicators for local and national use, especially through country offices of partner agencies, and by interacting with other appropriate agencies on the topic. Summaries on issues related to agencies' activities on vulnerability will also be placed on the web.

A technical meeting on global reporting and related data will

be convened by Earthwatch, in Geneva, in June 2002 to share experiences amongst major UN agencies and partner organizations. Furthermore Earthwatch, working with the UNEP Division of Environmental Conventions, will endeavour to promote coherence in requests for national information to ease country-reporting burdens.

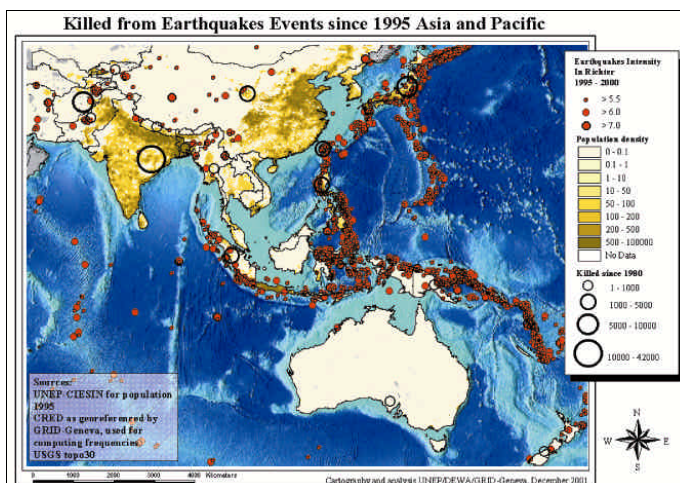
Finally, an update of the web-based Earthwatch compendium on partner organizations will be undertaken shortly.

## Mapping Natural Hazards Occurrences and Vulnerable Populations

A key objective of the "Project for Risk Evaluation, Vulnerability Indexing and Early Warning" (PREVIEW) is to provide information support and forewarn decision-makers about occurrences of natural disasters, in order that mitigation measures may be taken prior to their outbreak. Within this context, GRID-Geneva is currently in the process of developing a methodology to accurately determine the "physical exposure" of human populations to frequently-occurring natural hazards. In concrete terms, the aim is to quantify the number of persons exposed to a specific type of hazard over a given period of time. Integrating relevant data sets using Geographic Information System (GIS) analytic methods provides a

powerful means for computing "physical exposure", in a visually communicative manner. An example of such an information output is provided in the map (right) of earthquake events in Asia and Pacific between 1995 and 2000. Earthquakes are shown to be concentrated around geologic faults and tectonic plate boundaries, thereby explaining their frequent occurrence in countries such as Japan and Indonesia.

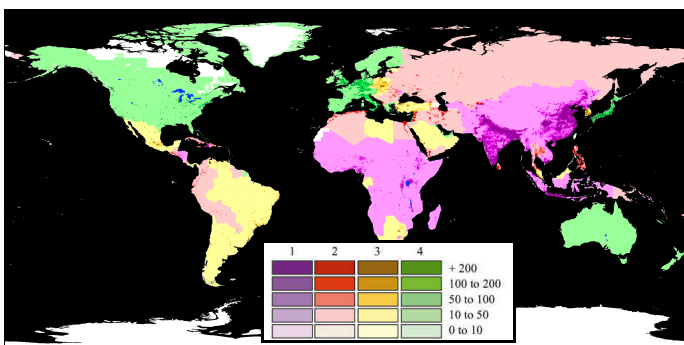
In any given area, the risk of human losses will largely depend on the frequency and intensity of the event (hazard), as well as on the number of people living in the region. In uninhabited areas, hazard frequency clearly poses no risk to human life and vice-versa. Physical exposure, however,



does not explain all the differences apparent between countries. Black circles on the map depict the number of victims caused by earthquakes. It can be distinguished that for an equal number of persons exposed, there is a significant discrepancy in the number of victims between some countries. This largely depends on population vulnerability, which can be defined as the capacity of a population to cope with disasters, or its "resilience".

In the map to the left, an attempt has been made to map country vulnerability to natural hazards. In this scheme, countries have been grouped into four categories

from poor (1) to rich (4), based on their per capita Gross Domestic Product. This in turn has been overlaid with population density data divided into five classes of intensity. The hypothesis is that maximum vulnerability is experienced in areas falling in the lowest GDP category (dark purple) and having the highest population density. The lowest vulnerability thus occurs in the richest and lowest-density areas (light green). By multiplying the number of persons exposed per year by their vulnerability, it is possible to evaluate average expected losses. Due to the long intervening period between two earthquakes, results need to draw on data covering a lengthy time period.



Human Vulnerability Map: Poorest countries (1) displayed in magenta and richest countries (4) in green. Changes in intensity indicate differences in population density. (<http://www.grid.unep.ch/activities/earlywarning/preview/ims/index.htm>)

## GIS Maps Help Build Dialogue for International Watercourses Cooperation

Freshwater is one of UNEP's priority areas, and one in which it is actively seeking to build partnerships with other organisations. In this context, GRID-Geneva entered into an agreement with Green Cross International (GCI) to provide GIS support for its "Water for Peace" project. The project is targeted at international water conflict prevention and enhancing integrated basin management. It is being carried out in preparation for the Third World Water Forum, to be held in Kyoto, Japan in 2003. Six trans-boundary basins have been selected for in-depth study: the Danube, the Jordan, the Okavango, the Parana-La Plata, the Volga and Volta.

In each basin, potential and actual causes of conflict, and opportunities for cooperation between states and stakeholders will be identified, and measures to promote international integrated water resources management will be initiated. Depending on the basin, the work will focus on different aspects of water conflict prevention. These range from increasing civil society participation, training of local authorities, institution building, facilitating dialogue between states, addressing the tensions raised by privatisation, and clarifying legal principles and regulations related to transboundary water management.

Already, baseline maps for the six trans-boundary river basins have been prepared by GRID-Geneva. These custom-made maps include information features such as watershed boundary, international frontiers and marine areas, hydrologic systems and major dams. A suite of thematic maps are to follow, based on a wide-range of data layers such as land cover/land use, precipitation, and engineering structures. These maps are intended to serve as a common baseline to help facilitate dialogue between states and key stakeholders.



A sample of one of the basin maps prepared by UNEP/GRID-Geneva. Shown here is that of the Volta watershed.



## UNEP/Global Resource Information Database-Geneva

International Environment House (IEH), 11 chemin des Anémones, 1219 Châtelaine, Geneva, Switzerland  
1st Floor, 'A' Block

Tel.: (+41-22) 917-8294  
Fax: (+41-22) 917-8029  
Email: [info@grid.unep.ch](mailto:info@grid.unep.ch)

Visit the GRID-Geneva website at:  
<http://www.grid.unep.ch/>

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## Renewal of GRID-Geneva Partnership

*(Continued from page 1)*

From the University of Geneva's perspective, "this collaboration consolidates the University's teaching and research work in environmental sciences and sustainable development" said Mr. Bourquin. Following the signing, the Directors responded to questions in a brief press conference.

While UNEP will remain GRID-Geneva's principal funder, Switzerland has agreed to provide Sfr. 350,000 annually over the period 2002-2005. The University of Geneva is seconding two researchers to

GRID-Geneva on a permanent basis. The renewed "Partnership agreement" illustrates that DEWA-Europe/GRID-Geneva's major sponsors firmly believe that the office contributes effectively to UNEP's programme and priorities, while helping reinforce Switzerland's environmental expertise and strengthening Geneva's green credentials.

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## Responding to UNEP's Environmental Data Needs

*(Continued from page 1)*

A series of recommendations are being derived from the meeting, for the further development and harmonisation of existing tools such as the GEO Data Portal, and to develop compatible regional portals that are fully integrated in the overall UNEP. Net design. There was notably a proposal to create regional pilot versions of the Data Portal beginning early in 2002, and well prior to the start-up of GEO-4. Another decision taken

was the establishment of a DWG sub-committee to agree on the indicators required for environment assessment, and harmonise existing lists of baseline/core data sets which are related to these. Finally, a proposal was made to continue the DWG's work and have it sanctioned by the DEWA Director as the "UNEP Consultative Group on Environmental Data".

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## New Staff (in January 2002)

**Stephan Kluser**  
Editor for GEO-3 Data Compendium

**Fabiana Succetti**  
UNEP.Net Contents Developer

## Euro-GRID Process: Strengthening Coordination among European GRID Centres

GRID-Warsaw hosted the fourth meeting of the European GRID centers which was held on 23-24 October 2001. This was preceded by a one-day seminar celebrating GRID-Warsaw's 10<sup>th</sup> anniversary, which shed light on its activities and achievements.

The objectives of the annual Euro-GRID Centres' Meeting is to appraise the network about the relevant activities and priorities of UNEP in general, and the Division of Early Warning and Assessment (DEWA) in particular, as well as to exchange information on each centre's activities. It also provides a forum to present and discuss the major projects being carried out by the centres and to coordinate these in a manner that is meaningful and useful to UNEP. At the same time, the discussions serve to give Euro-GRID centers direct insight into DEWA's priority projects, so that some of their outputs can be better integrated into UNEP's plan of work.

Two key projects were discussed at length, namely the Global Environment Outlook process which is the guiding line for all the Division's activities; and UNEP's Net which is to serve as UNEP's overarching information system. An overview of the draft DEWA strategy was made, which includes the need to update and re-define GRID/Centre agreements in line with DEWA's new priorities. The meeting also heard presentations on each of the Euro-GRID centre's major activities, and then moved to consider a series of potential project activities for collaboration. These most notably included contributing to the forthcoming European Environment Agency's report for the next European Ministerial Conference (Kiev 2003), and implementation of national or sub-regional portals. The next Euro-GRID meeting is scheduled to take place in mid-October 2002, at one of the centre's offices to be determined.

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## GRID-Geneva Calendar of Events

(January– March 2002)

### 16 January

European Community/European Space Agency; Global Monitoring for Environment and Security Information Day, Brussels, Belgium.

### 22 - 25 January

United Nations Office for Outer Space Affairs (UNOOSA); Inter-Agency Meeting on Outer Space Activities, Rome, Italy.

### 28 January

SAEFL; 4th CDS Steering Committee Meeting, Bern, Switzerland.

### 31 January

Geneva Environment Network (GEN); Cooperation and networking on web sites among GEN members, Geneva, Switzerland.

### 13-14 February

UNEP/DEWA; River Basin Information Systems Initiative, Nairobi, Kenya

### 3 - 15 February

Ramsar Convention; West and Central Asian Sub-Regional Meeting on the Convention on Wetlands, Tehran, I.R. of Iran, and field mission to Khuzestan wetlands.

### 13-15 February

UNEP Governing Council: Global Ministerial Environment Forum, Cartagena, Colombia

### 15 March

CRFG/SAEFL/DIAEE; "E-Environment", Geneva, Switzerland.