



# GRID-Geneva Quarterly Bulletin No. 1 - 2001

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UNEP/Global Resource Information Database-Geneva

## GEO-3 Data Portal CD-ROM Now Available

**Visit the New GRID-Geneva Website!**

The first CD-ROM version of the GEO-3 Data Portal was released by UNEP/GRID-Geneva in March 2001. Developed mainly to serve the data needs of partner organisations limited by poor Internet connectivity, the GEO-3 CD-ROM has been extracted from the main web portal and distributed to UNEP's network of 35 Collaborating Centres. Now that both an 'on-line' interface and a CD-ROM of the GEO-3 Data Portal are available, all users have guaranteed access to a common pool of high-quality and current data covering various environmental and socio-economic themes, which should help strengthen the scientific foundations of the Global Environment Outlook (GEO) - 3 report.

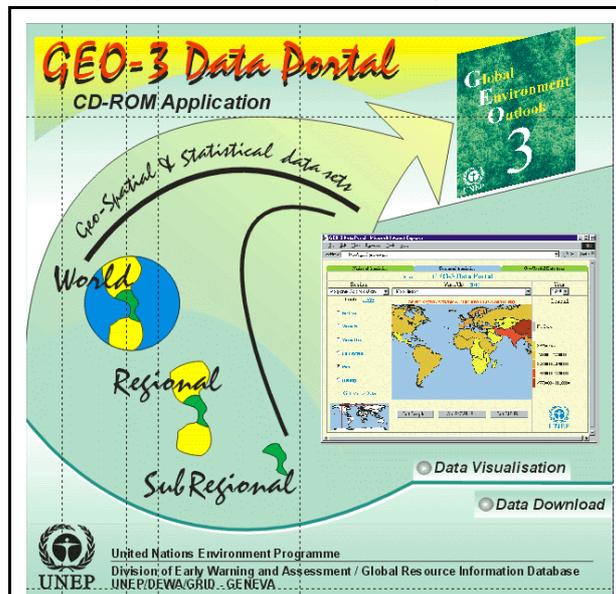
The main objective of the Data Portal is to provide Collaborating Centres with harmonized global and regional core data sets for GEO analyses and production work, as mandated by the First GEO-3 Production Meeting held in Bangkok in April 2000. The Portal provides access to a wide variety of national and regional statistics and geo-spatial data sets from internationally

recognized sources, covering a thirty-year period from 1972-2002, and targeting the nine themes addressed in GEO-3. The majority of the data relate to driving

forces, pressures, and environmental state (e.g. population, economy, energy, land use). Little information is currently available for environmental impacts,

societal responses or scenarios for future decades. These issues are being addressed through separate studies of GEO data needs, and require further coordination with other UN organizations and additional key data partners around the world.

As an 'on-line' website product, the GEO-3 Data Portal is constantly updated and expanded to assure easy and rapid access to a wide array



The CD-ROM version of the GEO-3 Data Portal has been distributed to UNEP's network of 40 Collaborating Centers.

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## Project on Global Risk/Vulnerability Index Launched

UNEP/GRID-Geneva is working in partnership with the Emergency Response Division of the United Nations Development Programme (UNDP/ERD) to develop a Global Risk/Vulnerability Index (GRVI) based on a statistical analysis correlating geophysical and socio-economic factors with the number of disaster victims. Such an Index would allow global comparisons of natural disaster risks faced by different countries to be made, and thereby assist decision-makers to channel international assistance where it is most needed. Progress realised by countries in tackling natural disasters over the short-term will also be registered to



A poor support infrastructure, renders rural populations in marginal areas particularly vulnerable to the impacts of floods and storms which are likely to become more severe and frequent as a result of climate change.

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Photo Credit: P. Errath, FAO

## Consultative Meeting on Assessment of the Euphrates and Tigris River Basins

The UNEP Regional Office for West Asia (ROWA) hosted a meeting in Manama, Bahrain from 12 to 15 March 2001 to discuss three studies it had commissioned on the Euphrates and Tigris basins, prepared respectively by the Arab Centre for the Studies of Arid Zones and Dry Lands (ACSAD), DEWA/GRIDs-Geneva and Sioux Falls, and the Regional Organisation for the Protection of the Marine Environment (ROPME). The overall aim of this initiative is to prepare a comprehensive scientific report on the Euphrates and Tigris basins as an input to the GEO and RIO+10 processes as well as use it as a background study for potential donor project proposals on international waters for the region.

The ACSAD report focuses on hydraulic schemes implemented in Turkey, Syria



Pictured here is the site of the proposed Ilisu Dam on the Tigris River in Southeastern Turkey. Water development projects in the twentieth century have had a major impact on river ecosystems and biodiversity. Reaching agreement on sharing Tigris-Euphrates waters' is a major challenge for riparian countries in this water-stressed region.

Photo Credit: Save Hasankeyf

and Iraq in the twentieth century and is supplemented by official national data made available for the first time. The environmental assessment by GRIDs Geneva and Sioux Falls which is mainly based on satellite image analysis, stresses the impacts of water

projects on ecosystems, particularly in the lower Mesopotamian marshlands. Finally, ROPME's work is mainly concerned with the impacts of changes in river flow and water quality on the marine environment in the northern Gulf, particularly on

local biodiversity.

After reviewing the aforementioned studies and discussing the main findings presented, the meeting's participants focused on

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## Global Vulnerability/Risk Index

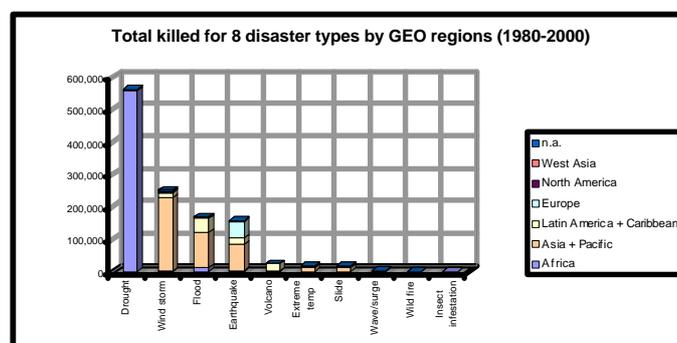
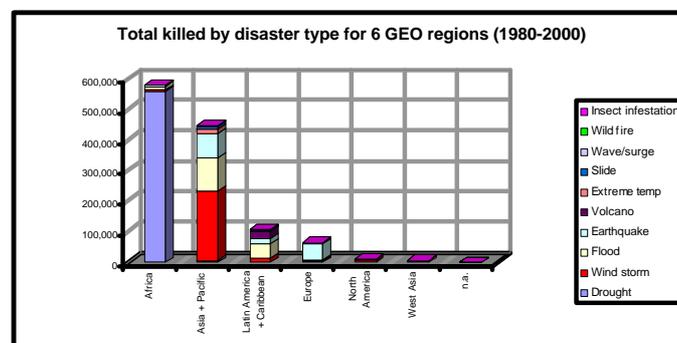
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promote efforts by national authorities to implement measures alleviating population vulnerability.

The GRVI will focus on ten types of natural disasters including droughts, windstorms, floods, earthquakes, volcanic eruptions, temperature extremes, landslides, wave/surge (tsunami), wild fires and insect infestations. Risk will be evaluated from three perspectives:

- population vulnerability (including level of development, preparedness, exposure);
- probability and intensity of natural disaster occurrence, and
- actual damages as reported by the Centre for Research on the Epidemiology of Disasters (CRED, Belgium) and insurance companies.

The Global Index will be calculated using official



national data and geo-spatial data sets from recognised international sources. The extensive GRID-Geneva archive of global data sets, including global environmental and population data sets, as well as national time-series compiled

through UNEP's Global Environment Outlook process, will serve as additional sources of information.

The final outputs of the project will be comprised of a comprehensive geo-statistical

analysis correlating risk (expressed in number of victims and in monetary terms) and a series of vulnerability factors. A set of risk/vulnerability indices will be developed (e.g. no. of victims, monetary costs, relative GDP impact, population affected, etc.) along with an explanation of their advantages and disadvantages in illustrating the level of risk/vulnerability faced by countries. A small interdisciplinary team has been set up at GRID-Geneva to implement the project, which is due to be completed in Autumn 2001. ?

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## Mapping the Earth's Land Cover

GRID-Geneva is involved in several projects related to land cover assessment and monitoring of environmental change. One of these activities is the Global Land Cover (GLC) 2000 project, coordinated and implemented by the Global Vegetation Monitoring Unit of the Joint Research Centre of the European Commission (EU/JRC). The purpose of this project is to develop a harmonised land cover base for the world using year 2000 data acquired by the SPOT 4 Vegetation Sensor. As a partner in this collaborative endeavour, GRID-Geneva is utilising SPOT Vegetation images to develop a methodology for monitoring of forest fires and their impacts on Madagascar's rich biodiversity.

In order to develop a homogeneous and comprehensive global land cover map, it is essential to apply *a-priori* a standardised classification system, that meets the needs of a variety of users. During a workshop to develop the map legend, held in Ispra on 29-30 November

2000, a decision was made to use the LCCS (Land Cover Classification System) as the reference classification system for the GLC 2000 project, for both regional and global maps. The LCCS was developed by the Food and Agriculture Organisation's (FAO) AFRICOVER Programme of the Environmental and Natural Resources Service (SDRN), following recommendations of the UNEP/FAO Expert Meeting on Harmonising Land Cover and Land Use Classifications (1993). The scheme uses a software program that consists of four modules:

- ◆ Classification: land cover classes are defined by the combination of a set of independent classifiers, which are hierarchically arranged and which can be linked with environmental and specific discipline-related attributes.
- ◆ Legend: storage of defined land cover classes according to the domains to which these classes belong. This module allows export of data in commonly used file



The GLC 2000 is a novel initiative to map global land cover using a standardised classification system.

formats and allows users to add user-defined names to the provided standard names.

and/or legends through the reference classification is possible at the level of classifiers and entire classes.

- ◆ Field data: storage of the detailed field survey information and automated classification of the data (this module will be available in the next version of the LCCS).
- ◆ Translator: comparison and correlation of classifications

GRID-Geneva is a member of a panel of experts that is currently reviewing the LCCS software. ?

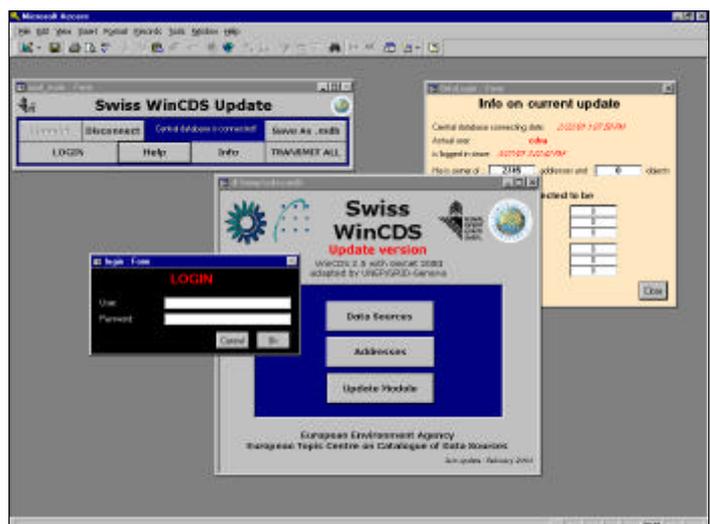
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## New Initiatives to Promote CDS Technology

In the first quarter of 2001, GRID-Geneva was closely engaged at both the national and regional levels in on-going developments aimed at improving and disseminating Catalogue of Data Sources (CDS) technology. On 9 February, the Institut Francais de l'Environnement (IFEN, the equivalent of the French Ministry of the Environment), hosted a meeting on meta-data activities. The meeting was attended by representatives of UNEP/GRID-Geneva, the Centre des Technologie de l'Information (CTI) and the Département de l'intérieur, de l'agriculture, de l'environnement et de l'énergie (DIAE) of the Canton of Geneva. Various meta-data development projects carried out by participating organizations were reviewed, and opportunities for potential collaboration explored. The main proposals which

emerged included cooperation in meta-data activities in the Lemman Region (Lake Geneva) of France and Switzerland, as well as easing access to environmental data catalogues held by various European countries.

At the national level, a meeting of Swiss CDS partner organisations was held on 8-9 March in Geneva, which reviewed the various CDS tools that have been developed to date. New CDS developments were also discussed, including the establishment of a meta-data standard compliant with geographic information based on ISO 19115.3, and Internet solutions for rapid on-line publication and updating of data. A needs assessment and the technical specifications for new applications are to be submitted to the CDS Steering Committee, which is scheduled to convene in early May.



During the interim period, the WinCDS Update tool will allow users to modify their meta-data on-line.

As for the recently launched Swiss WebCDS (<http://www.ch-cds.ch/>), the database continues to grow with new inputs being made on-line, and the site is now registering some

900 visitors each month. ?

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## GEO-3 Data Portal

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of data sets. Recent additions to the Data Portal range from new land cover themes, natural disasters to endangered mammal and bird species. More variables are also being processed, including production and consumption of ozone-depleting substances, energy consumption and supply, and greenhouse gas emissions. In addition, users may now generate statistics on available data and visualise them at various scales including at national, sub-regional and regional levels.

Technical limitations and the large size of certain geo-spatial files, has meant that the CD ROM version of the Data Portal holds nearly three-quarters of what is currently available on the website. To address this gap, updated CD-ROM versions will be regularly distributed to ensure that all partners have access to the latest information. ?

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## New Staff

**Prisca Chapuis**, Consultant for PREVIEW

**Gregory Giuliani**, Intern for Caspian Sea Imagery Analysis

**Christian Herold**, GIS Analyst for Global Risk/Vulnerability Index

**Damien Rochette**, Statistician for Global Risk/Vulnerability Index

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## Meeting on Tigris-Euphrates Basins

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possibilities for integrating the three reports into one comprehensive study. It was agreed that in such a consolidated report, the unit of analysis would be the entire drainage basin including the coastal/marine areas associated with the estuary region, and that emphasis be placed on environmental (biodiversity, pollution, etc.) and sustainable development issues. Based on this

approach, participants drafted a general table of contents for a comprehensive report. Participating organisations will in due course officially communicate to ROWA their interest to take part in this wider study. In light of feedback received, ROWA would determine the best course of action to pursue in consultation with governments and relevant UNEP Divisions. ?

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## Calendar of Events

(April - June 2001)

### 2-6 April

The 2nd GEO-3 Production Meeting, San Miguel Regla, Mexico.

### 23 April

Official Launching of the Cities Environment Report on the Internet (CEROI) for Geneva, International Environment House

### 9 May

UNEP/DEWA/GRID-Geneva "Partnership" Advisory Board Meeting at University of Geneva

### 15-17 May

Support to the Caspian Environment Programme (CEP) on Data/Information Management (training workshop in Baku, Azerbaijan)

### 28-30 May

GEO-3 Regional Consultation (hosted by UNEP/ROE and DEWA-Europe) in Geneva, Switzerland

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## New GRID-Geneva Website Launched

GRID-Geneva welcomes you to visit its newly-launched and fully revised website. The site provides access to GRID's extensive archive of environmental data sets, which are available for direct download. Some of the revamped website applications offer the latest in Internet technologies, allowing users to create dynamic maps and extract the underlying statistical data with only a few mouse clicks, as well as perform real-life GIS analysis 'on-the-fly' without special tools and skills. The site also acts as a gateway to environmental data sets held by partner organisations around the world via its meta-database services.

addressed at the GRID-Geneva website include early warning on emerging environmental problems and threats; support to UNEP's bi-annual review of the state of the world's environment (the Global Environment Outlook (GEO) process); capacity building projects to develop and strengthen environmental information systems; and description of case studies using GIS and remote sensing for the mapping, monitoring and sustainable use of natural resources. In addition, the site provides on-line access to a wide range of maps, graphics and publications, as well as to a globally-networked partnership of scientific data and environmental information providers.

The new GRID-Geneva website is available at:

<http://www.grid.unep.ch/>

Some of the major issues