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UNEP/Global Resource Information Database-Geneva

Taking the Pulse of the Planet with GEO-3

With three months to go to the World Summit on Sustainable Development in late August, UNEP launched its third Global Environment Outlook (GEO-3) report to kick start world leaders, industry, the public and others into action by providing crucial input to the Summit's deliberations. Describing the flagship publication on the global state of the environment, Dr. Klaus Töpfer, Executive Director of UNEP, said: "GEO-3 is the most authoritative assessment of where we have been, where we have arrived, and where we are likely to go". Underlining the strong link between development and environment, Dr. Töpfer stressed that "without the environment there can never be the kind of development needed to secure a fair deal for this or future generations."

Using the 1972 Stockholm Conference that established UNEP



as a benchmark year, the study takes a retrospective look at the environmental developments and policies of the past 30 years. It analyses positive achievements to restore the environment, highlighting improvements such as river and air quality in places like North America and Europe and a substantial increase in protected sites in Africa and South America. The international effort to repair the ozone layer, the Earth's protective shield, by reducing the production and consumption of chlorofluorocarbons (CFCs) is another notable success. But overall, the report says, there has been a steady decline in the environment, especially across large parts of the developing world.

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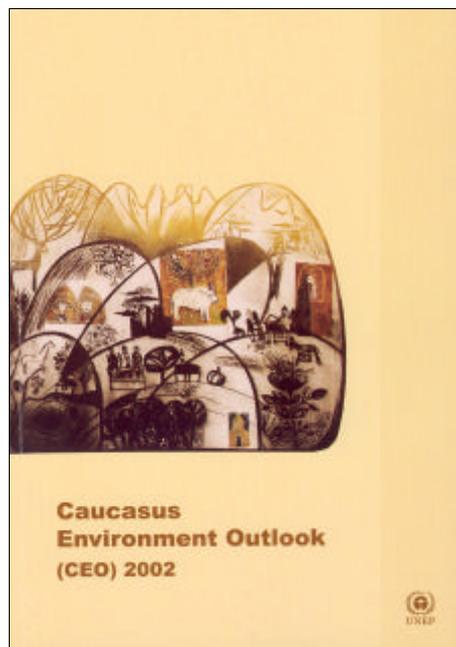
The GEO-3 report is available in all of the six official languages of the United Nations and is fully downloadable from several Internet mirror sites including www.grid.unep.ch/geo/ and www.unep.org/geo/geo3. Hardcopy versions of the report may be purchased from EarthPrint at www.earthprint.com

Sub-Regional Report on the Caucasus Released

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The first "Caucasus Environment Outlook" (CEO) report was launched in Tbilisi, Georgia, on 24 June. Georgian Minister of Environment, Mrs. Nino Chkobodze, and representatives from Caucasus countries and UNEP officiated the ceremony. The CEO report, carried out within the framework of UNEP's Global Environment Outlook process, was prepared by the GRID-Tbilisi office and involved a team of experts from the four Caucasus countries: Armenia, Azerbaijan, Georgia and Russia. Stakeholder consultations with participants from the four governments, NGOs, academic and scientific bodies were held to enrich the analysis and foster regional ownership of the final product. The Regional Office for Europe (ROE) and the Division of Early Warning and Assessment (DEWA-Europe) of UNEP coordinated and supervised the CEO report's preparation, and provided overall guidance and editorial support throughout the process. Financial assistance for the CEO report was furnished by UNEP and the Swiss Agency for Environment, Forests and Landscape (SAEFL).



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Copies of the Caucasus Environment Outlook report may be obtained from UNEP/DEWA-Europe.

New Version of GEO Data Portal Launched

A new enhanced version of the Global Environment Outlook (GEO) Data Portal was launched with the GEO-3 report on 22 May 2002. The portal, developed by UNEP/GRID-Geneva, is the culmination of a two year undertaking to provide GEO-3 report producers, as well as the global environmental community at large, with easy and timely access - via the Internet - to a common and consistent set of datasets from primary sources (UN and others). Covering a broad range of environmental and socio-economic themes, the Portal has matured into a unique data and information application holding as of March 2002 some 300 statistical and geospatial datasets at national, sub-regional, regional and global levels.

In addition to the basic service of making core datasets available to the GEO user community, state-of-the-art functionality has been continuously upgraded for

better on-line data visualisation and exploration including options to create graphs, tables and maps. The aim is to strengthen the analytical capacity of GEO Collaborating Centres (CCs) and other key partners in carrying out integrated assessments. Outputs that users can generate at their fingertips include:

- Graphs to show and explore the evolution ('trend') of a variable over a given time period for a specific country or region;
- Histograms to highlight the absolute distribution of values for certain parts of the world;
- Extreme values for a given variable, by displaying the range of minimum and maximum values.

The Portal's toolbox also offers advanced utilities such as: (i) a powerful search facility to



Get hold of today's most essential environmental variables via the GEO Data Portal accessible at <http://geodata.grid.unep.ch>

query the database and select from hundreds of variables available at different spatial levels and spanning over three decades; (ii) explore a range of time intervals based on user defined criteria; (iii) on-screen display of data values; (iv) downloading of selected data sets in various formats; and (v)

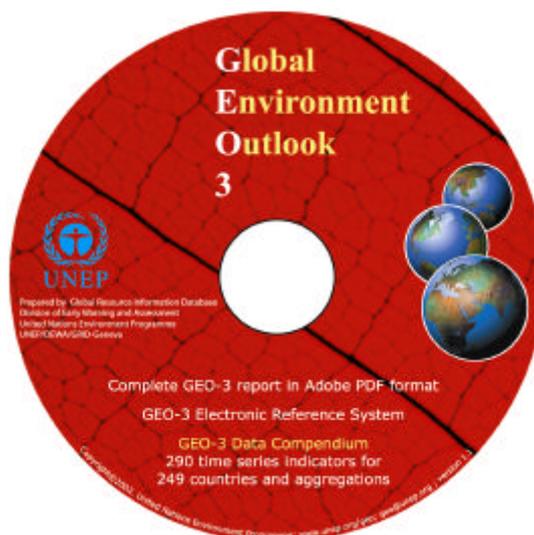
extensive documentation based on UNEP.Net descriptive meta-data standards. With its rich wealth of environmental information and cutting edge technology, the GEO Data Portal has emerged as the environmental data gateway of choice for scientists and the public alike.

GEO-3 Data Compendium

Extracted from the GEO Data Portal, the Data Compendium places the major statistical data sets underlying the integrated analysis of the environment in the GEO assessment at the disposal of all users. As such, the Data Compendium supports GEO analysis substantially and enhances the overall transparency of the reporting process, while potentially serving other assessment programmes by availing solid and harmonised background information.

The Data Compendium, compiled and edited by UNEP/GRID-Geneva, is essentially a snapshot of the GEO Data Portal at the time of publication of the GEO-3 report in May 2002. It therefore represents a 'frozen' copy of selected statistics of the Data Portal that have been tailor designed for the third GEO report. The Compendium does not only give data for major environmental issues per se, such as climate

change, deforestation or biodiversity, but also for relevant characteristics of the society and economy, like economic growth, urbanization rate, energy use, or life expectancy. In total, core data sets for 290 variables covering GEO-3's retrospective time frame of 1972-2002 are incorporated in the Compendium. Data are presented for the GEO regions and sub-regions, as specifically aggregated from national figures for the GEO-3 report. National statistics are given in cases where there was not enough country data available for aggregation to the regional levels. A CD-ROM version, inserted in all copies of the GEO-3 report, gives access to the full Compendium tables for all the years available including national statistics. An Internet version of the Compendium is also available at <http://geocompendium.grid.unep.ch>, while a hardcopy edition will be published by end August 2002. Still, for additional and up-to-



The GEO-3 Data Compendium is available on CD-ROM, in hard copy edition, and also accessible via the Internet.

date statistical and geospatial data, users are advised to consult the GEO Data Portal at <http://geodata.grid.unep.ch>

GEO-3 Report

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As a result the report concludes that people's vulnerability to natural hazards such as cyclones, floods and droughts is increasing.

Using the most up-to-date scientific data available including historic and recent satellite imagery, the report makes a comprehensive assessment of the impact of the human footprint on the environment. Some examples of this footprint include the loss of half of the world's wetlands in the last century and severe water shortages affecting at least 80 countries. In the decade since the Earth Summit in Rio de Janeiro, 58 fish species and one mammal and one bird species have become extinct and a remaining quarter of the world's mammals and one in eight of its birds are currently considered to be globally threatened. Sixteen million hectares of forests are removed annually and 15% of the world's fertile land has been degraded. The burden of poverty on the poor is increasing and the globalisation of trade is triggering pollution on a global scale. Marine pollution is becoming more widespread and is seriously threatening



The GEO-3 report uses a regional approach. There are seven GEO regions, divided into sub-regions: Africa, Asia and the Pacific, Europe, Latin America and the Caribbean, North America, West Asia and the Polar Regions.

human health. With marine harvests topping 80 million tons a year, one-third of the world's stock of fish is now ranked as depleted, overexploited or recovering.

Taking an innovative look at the next 30 years, the report uses scenario modelling to "tell strongly contrasting but plausible stories" of how the future may unfold. Four alternative ways in which society might proceed are explored. These are: (i) *Markets First*, where the industrialised world's values prevail through market-driven fixes; (ii) *Policy First*, where governments take strong

action to reach specific goals; (iii) *Security First*, a world characterised by great disparities, inequality and conflict and (iv) *Sustainability First*, a world with closer collaboration between governments and citizens and more equitable values and institutions. What these scenarios teach is that different decisions can lead us towards very different futures and with the wrong decisions today, we could be living on a drastically degraded planet within thirty years. Emphasising that the future is very much in our hands, Dr. Töpfer said that "we need concrete actions, concrete

timetables, and an iron will. It cannot be the responsibility of politicians alone. We are all shareholders in this enterprise".

GEO-3 was prepared by UNEP's Division of Early Warning and Assessment (DEWA) and its network of some 40 collaborating centres (CCs), including over a thousand scientists and experts from all over the world. DEWA-Europe/GRID-Geneva coordinated European inputs to GEO-3 and provided overall strategic data support, including access to a wide variety of global and regional "core data sets" through the GEO Data Portal.

Caucasus Report

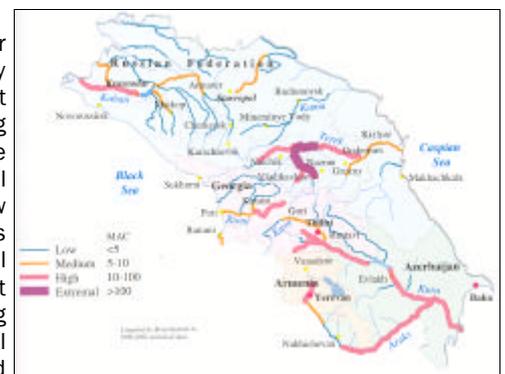
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In terms of the report itself, the focus is on presenting an objective and accurate picture of the current state of the Caucasus environment and highlighting major environmental changes that have taken place in the last 30-year period since the Stockholm Conference in 1972. The analysis singles out on-going socio-economic "driving forces" impacting on the environment and takes a special look on human vulnerability to environmental change. The regional environmental outlook between 2002-2032 is explored using scenarios. Two main scenarios highlight contrasting outcomes for the

region, one based on the "Status Quo" and the other driven by a "Market World" resulting in transformations similar to those experienced in Eastern European candidate countries for European Union membership.

Key issues on which the spotlight is directed include increasing air pollution from transport, water contamination by urban sources, and environmental damage from armed conflict. On the positive side, there has been decreasing pressure on land due to a decline in intensive agriculture relying on heavy use of pesticides and fertilizers, a substantial increase in protected areas and overall preservation of

the forest cover and biodiversity levels in the past 30 years. Emerging challenges include environmental impacts of new mega-projects particularly oil pipelines, transport networks linking Europe and Central Asia, and increased pressures from tourism. Finally, the report provides a basis for targeted action with recommendations to address the root causes of environmental degradation, mitigate negative environmental trends and create regional monitoring and research facilities.



Polluted rivers in the Caucasus.

Copies of the highly illustrative report, abounding in maps and graphics, may be obtained from UNEP/DEWA-Europe and ROE. An Internet and Russian version of the GEO report is also being published as well as a synoptic summary synthesizing the major findings.

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GRID-Geneva Advisory Board Meeting

The 9th Meeting of the GRID-Geneva "Partnership" Advisory Board (AB) was held on 29 April at UNEP's International Environment House. In attendance were representatives from the Swiss Agency for Environment, Forests and Landscape (SAEFL), the University of Geneva and UNEP (DEWA and ROE). On behalf of AB members, Dr. Arthur Dahl, welcomed Prof. Charles Hussy as a new Advisory Board member from the University of Geneva, remarking that his nomination should help to strengthen links with the University.

The Regional Coordinator, Mr. Ron Witt, provided a synoptic overview of all recent and updated project activities, and presented the sponsoring

partners with the new Workplan for 2002. Amongst the new activities highlighted are the Global Assessment and Data Support Service, the Atlas of Global Change, and substantive support to UN System wide Earthwatch.

An overview of the staffing and budget situation were also provided, with Board members expressing their overall satisfaction with the sound and steady growth attained, and for the high quality products and cutting edge services provided by the GRID-Geneva team.

The next Advisory Board meeting will be hosted by the University of Geneva at the Forel Institute in Versoix and is scheduled to take place on 31 October 2002.

GRID-Geneva Calendar of Events (July– September 2002)

1 - 2 July

Ninth Meeting of the System for Observation and Information on the Alps (SOIA), Monaco, France.

6 - 7 July

Science Night, Geneva, Switzerland.

8 - 12 July

ESRI International User Conference, San Diego, USA.

15 - 19 July

World Civil Society Forum, Geneva, Switzerland.

26 August - 4 September

World Summit on Sustainable Development (WSSD, Rio + 10), Johannesburg, South Africa.

4 September

Workshop 2002 Swiss Environmental Catalogue of Data Sources, Bern, Switzerland.

5 - 6 September

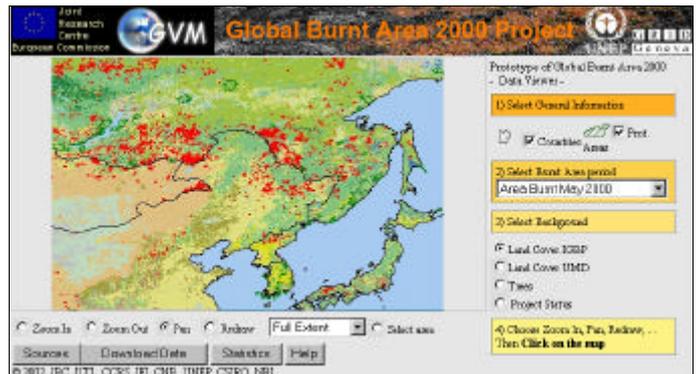
International Conference on Integrated Water Resources Management in the Upper River Basins of Mountain Areas, Megève, France.

Global Burnt Area 2000 Project

Over large regions of the globe, fires are known to contribute significantly to the release of gases and aerosols into the atmosphere, and to cause major disturbances to the vegetation cover. Biomass burning of anthropogenic origin contributes up to 50%, 40% and 16% of total emissions of carbon monoxide, carbon dioxide and methane respectively. Both the scientific

2000, using medium resolution (1 km) satellite imagery acquired by the SPOT-Vegetation sensor and to quantify the area burnt in terms of vegetation cover type. In this interim phase, a prototype burnt area map has been prepared which will be revised based on user feedback.

To facilitate data interpretation,



Burnt area data classified by month of observation in 2000 is available for direct download at the GRID-Geneva website.

community and policy makers have expressed a need for reliable and quantitative information on the magnitude and spatial distribution of biomass burning for improved decision-making.

To address this critical data gap, the Global Burnt Area (GBA 2000) initiative was launched by the Global Vegetation Monitoring Unit of the European Union's Joint Research Centre, in partnership with six other organisations including UNEP/GRID-Geneva. A specific objective was set to map the global burnt area in the year

an Internet Map Server (IMS) application has been created by UNEP/GRID-Geneva allowing users to integrate burnt area maps with other sources of information such as country and park boundaries and land cover data. In this way, users can determine not only the number of fires and extent of affected areas, but also the type of burnt vegetation (grassland or forest) and damage to protected areas.

Recent Publications and Other Products

- ◆ Third Global Environment Outlook (GEO-3) Report
www.grid.unep.ch/geo/ and www.unep.org/geo/geo3
- ◆ Caucasus Environment Outlook (CEO) Report (available on request)
- ◆ GEO Data Portal
<http://geodata.grid.unep.ch>
- ◆ GEO-3 Data Compendium
<http://geocompendium.grid.unep.ch>
- ◆ Global Burnt Area 2000 Project
www.grid.unep.ch/activities/earlywarning/preview/ims/gba/