



# DEWA/GRID-Geneva

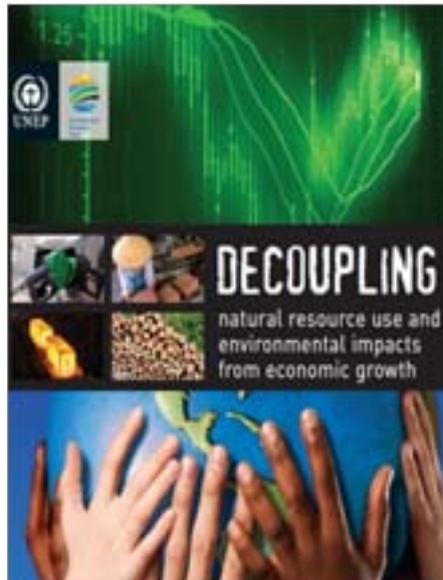
Bulletin No. 2 - 2011 (May-August)

## Doing more with less

By Jaap van Woerden and Géraldine Boezio

After a special media preview at the United Nations in Geneva on 9 May, the United Nations Environment Programme (UNEP) launched a new report on the theme of 'decoupling' on 12 May at the 19th Session of the UN Commission on Sustainable Development (CSD-19) in New York. The report entitled 'Decoupling Natural Resource Use and Environmental Impacts from Economic Growth' is the fourth report of the International Resource Panel (IRP) and seeks to apply the concept of decoupling economic growth and human well-being from negative environmental impacts and escalating resource use.

This new report, prepared with scientific and practical data support from UNEP/GRID-Geneva, was presented by Achim Steiner (UNEP Executive Director), Joan Claos (UN-Habitat Executive Director), Ashok Khosla (Panel Co-Chair) and Mark Swilling (Lead Author)



partially due to efficiencies that have led to reductions in resource prices. With food, rare metals, energy and raw materials rising significantly in real price terms, pre-conditions for determined 'decoupling' efforts are stronger than ever before. Citizens of developed countries annually

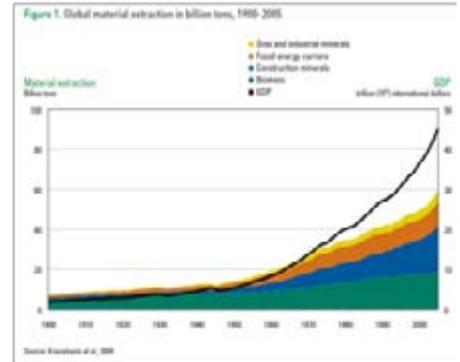


Figure 1: Global material extraction in billion tons, 1900-2005.

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Figure 1. Two aspects of 'decoupling'

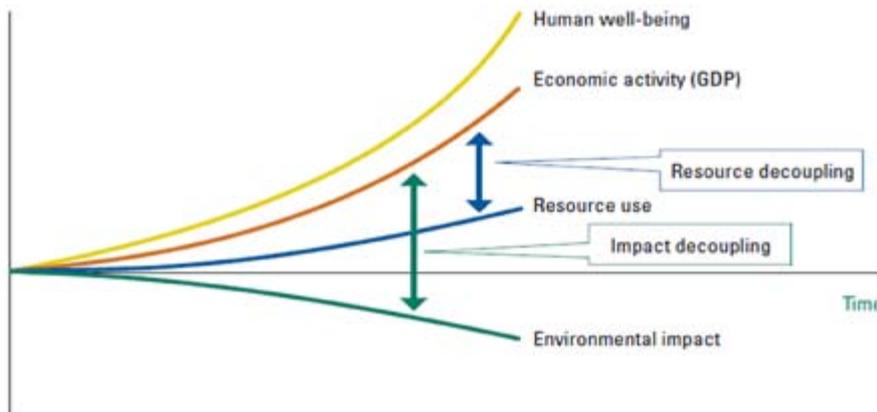


Figure 2: Two aspects of decoupling.

during a special CSD-19 side event.

'Decoupling' addresses the dilemma of expanding economic activities equitably while attempting to stabilise the rate of resource use. Reducing the negative impacts on the environment while "growing" the economy poses an unprecedented opportunity and challenge to society. Consumption of resources has exploded since the time of our great-grandparents,

consume an average of 16 tons of food, rare metals, energy and raw materials per capita (ranging up to 40 or more tons per person in some developed countries). By comparison, the average person in India today consumes four tons per year. With the growth of both population and prosperity, especially in developing countries, the prospect of much higher resource consumption levels is far beyond what is likely sustainable, warns the report. The

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Picture 3: Mark Swilling, Lead Author of the report, during the side event, together with Ashok Koshla, IRP Co-chair, and Achim Steiner, UNEP Executive Director. Photo courtesy of Leila Mead/IISD.

world is running out of cheap and high-quality sources of essential materials such as oil, copper and gold, the supplies of which in turn require ever-rising volumes of fossil fuels and freshwater to produce.

By 2050, humanity could consume an estimated 140 billion tons of minerals, ores, fossil fuels and biomass per year – three times its current appetite – unless the economic growth rate is ‘decoupled’ from the rate of natural resource consumption. Improving the rate of resource productivity (‘doing more with less’) faster than the economic growth rate is the notion behind the concept of ‘decoupling’. However, this goal demands an urgent re-think of the links between resource use and economic prosperity, buttressed by a massive investment in technological, financial and social innovation, to at least limit consumption per capita in wealthy countries and help developing nations follow a more sustainable path.



Picture 4, 5, 6: Investment in technological, financial and social innovation is needed to ‘decouple’ resource consumption from economic growth rates, says the report (pictures courtesy of Jaap van Woerden).



For more information, kindly see:  
<http://www.unep.org/resourcepanel/Publications/Decoupling/tabid/56048/Default.aspx>

**GRID-Geneva’s contribution to the Global Assessment Report on Disaster Risk Reduction 2011**

By Pascal Peduzzi and Géraldine Boezio

In May 2011, the United Nations International Strategy for Disaster Reduction (UNISDR) published the second edition of the Global Assessment Report on Disaster Risk Reduction (GAR 2011). The report was launched on 10 May 2011 at the Global Platform for Disaster Risk Reduction by the UN Secretary General Mr Ban Ki-Moon and can be downloaded at:

<http://www.preventionweb.net/english/hyogo/gar/2011/>  
 GRID-Geneva is one of the main UNISDR

From PREVIEW, users can access historical hazard events (tropical cyclones, floods, earthquakes, volcanic eruptions, forest fires, and tsunamis) as well as expected average hazard frequencies, exposure and risk for selected hazards (tropical cyclones, floods, landslides). This updated version now features aggregated statistics on human and economical exposure as well as trends from 1970 to 2010 by country and region.



Picture 1: UN Secretary General Ban Ki-moon launches the GAR 2011. Photo courtesy of UNISDR.

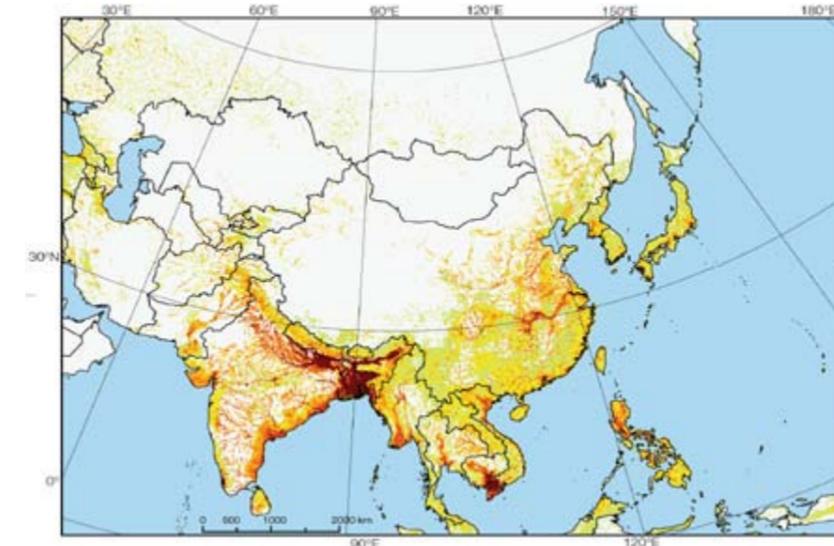


Figure 1: Mortality risk distribution from weather-related hazards (tropical cyclones, floods and rain-triggered landslides) in Asia as modeled. Cartography Peduzzi, GRID-Geneva, 2011. The risk is provided in five classes, from green (low risk) to red (high risk).

collaborators for global risk evaluation. The partnership with UNISDR started in 2003 and has been expanding ever since. GRID-Geneva was already a major contributor to the GAR 2009 and, for the second edition, it produced half of Chapter 2. Chapter 2 includes updates on risk distribution patterns and risk trends analysis based on quantitative analysis using spatial and statistical data for global disaster risk. In particular, GRID-Geneva computed the exposure, vulnerability and risk for tropical cyclones, floods and landslides; updated the multi-hazard Mortality Risk Index; and estimated the first risk trend analysis by region. It also produced the graphs and maps for the entire GAR 2011.

All the data provided by GRID-Geneva for the global analysis can be visualized and downloaded at the PREVIEW Global Risk Data Platform:

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



Picture 2: Opening Ceremony of the Third Session of the Global Platform and launch of the GAR 2011. Photo courtesy of UNISDR.

## SoER for Bosnia and Herzegovina, 30 May - 3 June 2011 Sarajevo

By Alexandra Serebryakova and Géraldine Boezio

A Project Team Workshop was organized by ENOVA Consultants & Engineers with the purpose of discussing the first draft of the State of Environment Report (SoER) for Bosnia and Herzegovina (BiH). Approximately twenty experts attended the Workshop, including environmental consultants from the ENOVA/UBA Consortium and representatives from the Ministries of BiH.

The major objectives of the SoER are to provide an integrated assessment of the state of the environment, identify environmental trends and impacts that have been taking place since the time of conflict, and formulate policy options for decision-makers that will take into consideration trans-boundary processes and differences between administrative entities in BiH. The main outputs of the SoER will include addressing and overcoming barriers to improved environmental decision-making and access to relevant information at the state and entity levels in BiH.

In the course of the Workshop, the first draft of the SoER was found to be a good start, but requiring major improvements. A number of remarks were made:

1. A need to obtain data for 2010-11. Due to the fact that the SoER will be published in 2012 and the most recent data provided in the SoER are available only for 2009, the need to obtain data for 2010-11 was found to be essential.
2. A need for deeper analysis of



Picture 1: Lively discussions during the meeting.

data and explanation of trends. A lot of data are currently presented without interpretation.

3. A need to highlight the Core Set of Indicators that have not been collected yet in BiH. This should serve as an incentive for initiating the collection of missing data.

Taking into consideration the comments and recommendations, ENOVA agreed to revise the first chapter drafts of the SoER by the end of June 2011, and then to send it for further review and comments to UBA and at a later stage to UNEP. At the beginning of July 2011, key stakeholders are to be consulted for major comments and concerns before the Intermediate Stakeholder Consultation on the SoER first draft that will take place in Sarajevo in September 2011. This second stakeholder's consultation will take place at a government building to assist in establishing national ownership of the report.



Picture 2: Workshop participants.

The preparation of the BiH SoER responds to a governmental demand. It will serve as a background document for decision-makers on the state and trends of the environment, provide a number of targeted policy options and contribute to science-based decision-making and sustainable environmental governance in BiH. It is anticipated that the document will facilitate cooperation between the BiH's two UNEP's entities and considerably enhance future implementation of environmental policies.

During the same week May 30-June 3 2011, UNEP consultant also conducted interviews with representatives from the ministries and data collection centres with the purpose of conducting a gap analysis for development of an integrated Environmental Information System (EIS). The main purpose of the survey was to identify EIS needs of administrative institutions responsible for environmental protection in BiH. This included evaluation of institutional constraints, legal framework, technical capacity (hardware and software), human resources capacity (staff involved in the EIS work, data management, evaluation and reporting) and data gaps.

Both activities are being implemented in the framework of the Millennium Development Goals Fund (MDG-F) Programme "Mainstreaming Environmental Governance: Linking Local and National Action in Bosnia and Herzegovina". The Programme aims to address and overcome barriers to delivering environmental services and management at the state and entity level in BiH by increasing national environmental awareness and actions.

More information can be found at:

<http://www.eea.europa.eu/publications/western-balkans>

## Preparatory meetings for "The Eye on Earth Summit"

By Géraldine Boezio

In view of the "The Eye on Earth Summit, Pursuing a Vision" on 12-15 December 2011 in Abu Dhabi, representatives from GRID-Geneva attended the two preparatory meetings (Summit Framework Committee and Working Group 1) that took place in Geneva on 20-21 and 27-28 July, respectively.

The five Working Groups overall are:

1. Policy, Governance and Institutional Networking
2. Content and User Needs
3. Technical Infrastructure
4. Capacity Building, Education and Awareness Building
5. Applications showcase

The Summit has been co-organized among others by UNEP, the Environment Agency Abu Dhabi and the European Environment Agency (EEA). An expected outcome of the Summit was a clear statement on ways and means to strengthen existing initiatives and fill gaps towards informed policy-making in support of a sustainable future. As part of preparations for the United Nations Conference on Sustainable Development (UNCSD) in 2012 (RIO+20 Summit), the Eye on Earth Summit represents an opportunity and milestone to focus attention on 20 years of collective efforts in order to achieve sustainable development, reduce poverty and transform the global economy.

For more information, please visit the following website:

<http://www.eyeonearthsummit.org>



## Launch of "Switzerland's state of the environment in a global context: comparison of indicators" project

By Hy Dao and Géraldine Boezio

Currently about 170 indicators on the state of the environment in Switzerland are published on the website of the Swiss Federal Office for the Environment (FOEN) <http://www.bafu.admin.ch/umwelt/indikatoren/index.html?lang=en>. The "Switzerland's state of the environment in a global context: comparison of indicators" project, which is being carried out by GRID-Geneva, aims at setting these indicators in a global context, in order to compare Switzerland with other countries worldwide. The comparison will be done based on data and indicators available from the present online environmental reporting system and on the environmental indicator approach developed by FOEN. To identify suitable indicators available in the indicator system developed by FOEN, GRID-Geneva will generate the following deliverables:

1. A data set containing the global (eventually regional) means and data available for countries worldwide.
2. A graphical representation of the data set.
3. Text description and interpretation containing the following points:

- A statement about Switzerland's state in the global context respective to the data concerned.
- A statement about the development of the Swiss data relative to the development of the chosen worldwide data.
- If possible, trends and perspectives concerning the development of the chosen data.
- Benchmarking, explanations and reasons for the state and development of

the Swiss data in a global context.

- Constraints and limitations to the above-named interpretations and comparisons (methodological, situation-dependent...).

The first meeting took place on 23 August 2011 at FOEN offices in Bern, where FOEN experts in various environmental fields discussed methodological issues. Final results will be presented to FOEN representatives in October 2011.

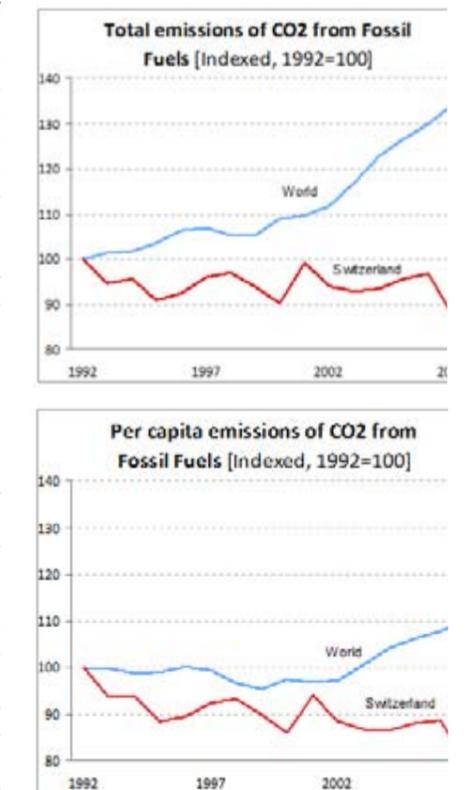


Figure 1 and 2: Data source : GEO Data Portal <http://geodata.grid.unep.ch/>

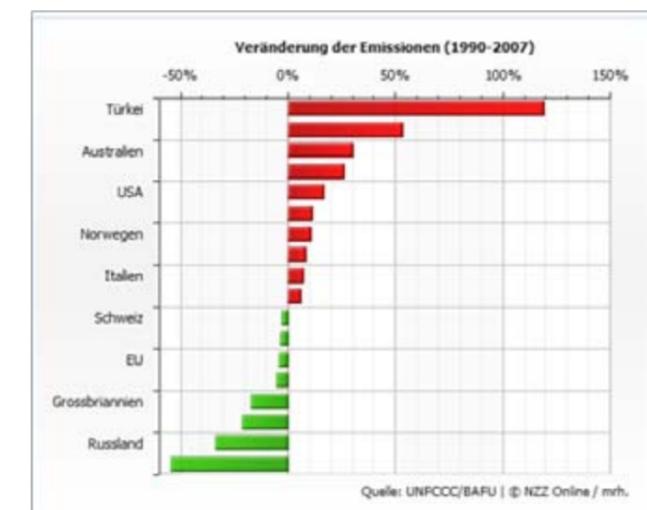


Figure 3: Visual examples of Swiss-World comparison

## EnviroGRIDS contribution to the Water Framework Directive (WFD) in the Black Sea Basin

By Géraldine Boezio and Anthony Lehmann

The main objective of the EnviroGRIDS Project in the Black Sea Basin is to construct, maintain and use modern Earth observation systems that will contribute to the Global Earth Observation System of Systems (GEOSS). EnviroGRIDS, whose consortium of 27 partners is coordinated by GRID-Geneva and UniGe, was launched in April 2009 with a duration of four years. EnviroGRIDS is targeting the Water Societal Benefit Area by building the first full hydrological model for the Black Sea catchment that will explore the outcomes of integrated scenarios of change (climate, land cover and demography) on the water quality and quantity of all rivers basins in a comparative way.

Integrated Water Resource Management (IWRM) translates in the European context into the Water Framework Directive (WFD), which was adopted by the European Parliament in 2000. The WFD has proven itself as an important step forward in water related policy-making in Europe. The overall goal of the WFD is to reduce and avoid pollution of all kinds of water - by cleaning what is polluted and protecting what is still clean, while getting citizens involved in doing so. Before 2000, water regulations were mainly limited to administrative boundaries rather than to water-relevant boundaries such as river basins. Regulations were defined to protect water quality per sector and measures were limited to the scope of one authority. The WFD broke down this barrier, allowing geological, environmental and societal water pollution issues to be addressed on a European wide scale.

### Main principles of the WFD

The WFD encompasses all types of water, from rivers and lakes, to beaches, shorelines and groundwater bodies. In traditional water management, these various types of water are often regulated by different legislation and fall under the authority of different institutes. Under the WFD, the working unit becomes the river basin, moving away from administrative boundaries such as communes, provinces, districts or countries that more often than not cross water-related boundaries. The WFD model of water management requires the installation of a regulating body for the entire river basin. The installation of one regulating body responsible for an entire river basin often unites rep-



Figure 1: Surface water viewer.

resentatives from multiple regions and of one regulating body responsible for an entire river basin often unites representatives from multiple regions and even countries. One extreme case is the river Danube, which is now regulated by the ICPDR (International Commission for the Protection of the Danube River). The ICPDR is driven by the interests of 19 riparian countries and of the European Union (EU).

The WFD requires that all surface water achieves "good status" by a set deadline. At the moment this deadline is 2027 (after three management cycles). For surface waters the "good status" compares to a situation of minimal anthropogenic impact. This refers to the quality of the biological community, the hydrological characteristics and the chemical characteristics. The WFD also sets higher objectives for the protection of unique and valuable habitats, drinking water resources and bathing water. Groundwater bodies should not be polluted at all, meaning no direct discharges, and monitoring for indirect

### Key objectives of the WFD:

- expanding the scope of water protection to all waters, surface waters and groundwater;
- water management based on river basins;
- achieving "good status" for all waters by a set deadline;
- "combined approach" of emission limit values and quality standards;
- getting the prices right;
- getting the citizen involved more closely;
- streamlining legislation.

discharge. Strict limits are set for nitrates, pesticides and biocides. Abstraction of water is limited to 'sustainable' amounts.

### How can EnviroGRIDS contribute to the WFD in the Black Sea Basin?

By building spatially-explicit integrated scenarios of scenarios of climate, land cover and demographic changes for the entire Black Sea catchment, EnviroGRIDS adds valuable information to complement traditional river basin management plans. Demographic data is also essential to assess population vulnerability to water scarcity. The inclusion of demographic and climate data anticipates the impact of major shifts in population on the regional environment that could potentially threaten the ability to reach the goals of the WFD. Without the integrated scenario analysis of EnviroGRIDS, these issues might only become evident too late in the water management process for the 2027 deadline to be achieved.

The Soil and Water Assessment Tool

(SWAT) is used by EnviroGRIDS to calibrate a full catchment hydrological model. This model will be useful to evaluate water quantity and quality where monitoring data are lacking. It will also allow comparison of observed versus predicted data. SWAT output will be transboundary by nature and standardized across the entire catchment. All river basin authorities will be able to download the full data set concerning its particular basin of interest to start using SWAT at a basin scale and enhance it with local data. SWAT is also a very interesting tool for Integrated Water Resource Management, as it is closely related to agricultural models, and can be linked with ecological models, flood models or hydraulic energy production models. EnviroGRIDS will assist national water authorities to reach core international data sets that are referenced in the Infrastructure for Spatial Information in the European Community (INSPIRE) and/or GEOSS. EnviroGRIDS will also help regional databases specialised on water or biodiversity to make available their data, so that they can reach the Water Information System for Europe (WISE) and the Biodiversity Information System for Europe (BISE).

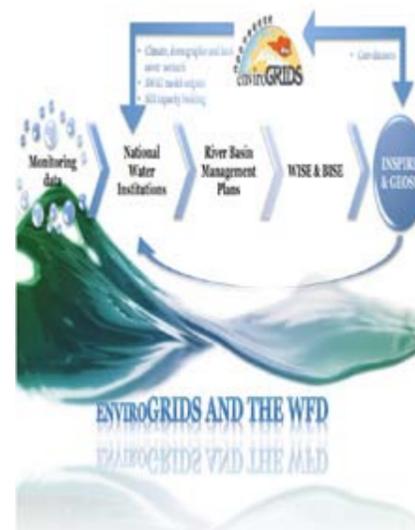


Figure 2: EnviroGRIDS and the WFD.

## Calendar of events

### UNEP meetings

- 2nd GEO-5 Production and Authors' Meeting (PAM-2), 5-8 September, Bangkok, Thailand
- 3rd GEO-5 Chapter Working Group 10 "Options for Europe" (CWG-10) Authors' Meeting, 26-28 October, Budapest, Hungary
- 2nd Stakeholders' Meeting for the Bosnia and Herzegovina State of Environment Report (SoER), 13-15 September, Sarajevo, Bosnia and Herzegovina

### Other meetings/missions

- Assessment of eutrophication and nutrient pollution in the Black Sea and experiences from the Baltic Sea, 6-7 September 2011 in Istanbul, Turkey
- SCOPES ARPEGEO (Deploying Armenian distributed Processing capacities for Environmental GEOspatial data) kickoff meeting, 6-9 September, Yerevan, Armenia
- CCSA (Interagency Committee for the Coordination of Statistical Activities), 7-9 Sept, Luxembourg
- Climate change and bird life, 9 September, Sempach, Switzerland
- UNEP assistance to USA-Morocco Cooperation, 12-14 September, Morocco
- ACQWA 3rd General Assembly Meeting, 14-16 September, Zaragoza, Spain
- enviroGRIDS Work Package Leader meeting, 21-23 September, Istanbul, Turkey
- World Resources Forum, 20-22 September, Davos
- Climate Week, Hamburg 23-30 September
- Enviro Info Conference, JRC-Ispra (Italy), 5-7 October
- 11-15 October 2011: AfroMaison 2nd consortium meeting, Fort Portal, Uganda