



DEWA/GRID-Europe

Bulletin No. 1 - 2010 (January-April)

A new way to integrate environment into the political agenda - RIVAMP

By Pascal Peduzzi and Géraldine Boezio

The Risk and Vulnerability Assessment Methodology Development Project (RiVAMP) was conceived to create a risk and vulnerability assessment tool that can be utilized by national governments for the purpose of developing appropriate policy and legal instruments and formulating plans and programmes that build resilience against the adverse impacts of natural hazards. The assessment methodology guides decision-makers and local communities on how to assess risk and make choices that support sustainable livelihoods, through the protection and improved management of ecosystems. The project aims to develop a tool that can be implemented in different countries and locations, allowing for comparative assessments and technical rigour.

At the same time, the tool provides a robust assessment of risk at the local level. Although different types of risk and vulnerability assessments exist, what is new about RIVAMP is that it recognises ecosystems and climate change in the risk assessment process. Its purpose is to use evidence-based, scientific and qualitative research to demonstrate the role of ecosystems in disaster risk reduction. Through RiVAMP, UNEP demonstrated that a high-quality environment is a key component for future development.

In May 2010, the Jamaican government accepted to be the first country where this methodology would be tested. Jamaica was selected for several reasons, such as: its high vulnerability to tropical cyclones and sea level rise; diverse ecosystems and rich biodiversity which are under pressure as a result of population growth, economic development and a strong international tourism industry; and high-level government commitment to hazard mitigation and climate change adaptation. After a consultative process driven by the government at the national level, Negril was chosen as the study area for the pilot assessment. Negril - a 10km-long beach on the west coast of Jamaica - is one of the flagship touristic destinations, with related earnings representing more than 5% of Jamaican GDP. UNEP's national partner was the Planning Institute of Jamaica (PIOJ). This choice was crucial, as PIOJ depends directly on the Min-

istry of Finance and planning is the key in the sustainable development process.

The main threat in Negril is the erosion of the beach, which is disappearing at a yearly rate of 0.5-1 m. Once the widest beach of Jamaica, in some places the sea has advanced up to hotel walls.

The aims of RiVAMP in Negril were to:

- Collect relevant data and information
- Identify the triggers of the beach erosion
- Demonstrate the role of ecosystem in mitigating this risk
- Run scenarios for different hypotheses related to climate change.

The project started by identifying key partners. With the assistance of PIOJ, the different stakeholders were rapidly identified and invited to form an advisory group to facilitate rapid access to necessary data, and first-hand expertise. A preliminary data analysis led to a first idea of the priorities and themes to be addressed. The second mission was to run expert consultations at both national and local levels. It was followed by local community consultations which proved to be very important, as external expertise can only measure the impacts and run scenarios, but it cannot know the stories that have shaped the local context.

The scientific analysis included several component: remote sensing to map the distribution of environmental features using very high resolution satellite images (60 cm spatial resolution) and compute coastal erosion (using past aerial photos for comparison). A geographical Information System (GIS) was used to extract different parameters such as slope, width of sea grass and width of coral reef, as well as model exposures of the population and key infrastructure to tropical cyclones. Multiple regression analysis allowed to present statistical evidence that wider offshore coral reefs and sea grass extent reduce beach erosion. Finally, coastal wave energy and the erosion process were modelled under different climate change scenarios.

The study revealed that, if current trends continue, Negril's beach may not last beyond a decade. Thus a "business as usual" is not an option if tourism and related

infrastructure are still desired in this area. Climate change has two main impacts: on the one hand, the sea level is rising at an accelerated rate; on the other, by warming up the ocean, there is more energy in the systems. Thus waves are more powerful and the observed frequency and intensity of tropical cyclones is increasing - which represents a threat for the coastal population, infrastructure and ecosystems. The RiVAMP study demonstrated that a well-protected natural ecosystem can mitigate the impacts of climate change and risk re-

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duction. It provides quantitative evidence that areas behind wider coral reefs and sea grass beds were less subject to erosion. For most stakeholders, the role of sea grass came as a surprise, as it is not much valued. The paradox of sea grass is that tourists like the beach, the beach "likes" the sea grass, but tourists do not like the sea grass - this is a typical example of a compromise to be made between development, environment and level of protection.

The report was launched in March 2010 at both national and local levels and has already been used for advocating greater consideration of environment in development. The results triggered a vivid debate and significant interest in Jamaica and in Negril. The national-level launch benefited from a high level of media coverage and representation, with the state Minister of Foreign Affairs co-chairing the launch - along with PIOJ and UNEP. At the local level, hotels have started to be interested in how they could better preserve sea grass, while still having pleasant swimming conditions for their tourists. The RiVAMP pilot project was successful and has opened a window of opportunities which should not be missed. A review process was held in May 2010 and provided several recommendations on the future of RiVAMP for both Jamaica and other similar places in the world.

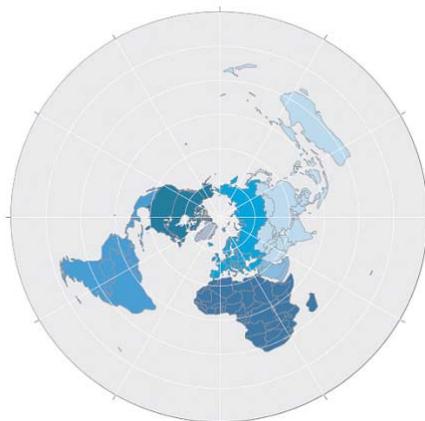
The ESPON Database project

By Hy Dao and Andrea De Bono



Since 2008 DEWA/GRID-Europe has been working as an expert partner for the ESPON Database 2013 project. The Database project is a cross-cutting component of the ESPON 2013 Programme, the European Observation Network for Territorial Development and Cohesion, which supports policy development related to the European Union Cohesion Policy. The ESPON 2013 Programme is 75% financed by the European Regional Development Fund, with the remaining 25% being funded by 31 countries participating (27 EU Member States plus Iceland, Lichtenstein, Norway and Switzerland). The role of DEWA/GRID-Europe in the ESPON Database project is to harmonize and combine data at global and European levels, in order to enable ESPON to increase its scales of analysis, both from a spatial and temporal point of view.

GEO regional breakdown



GEO sub-regional breakdown

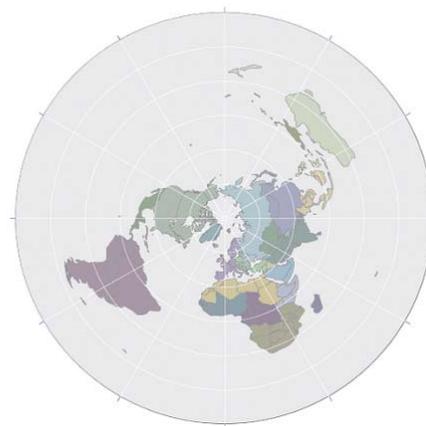
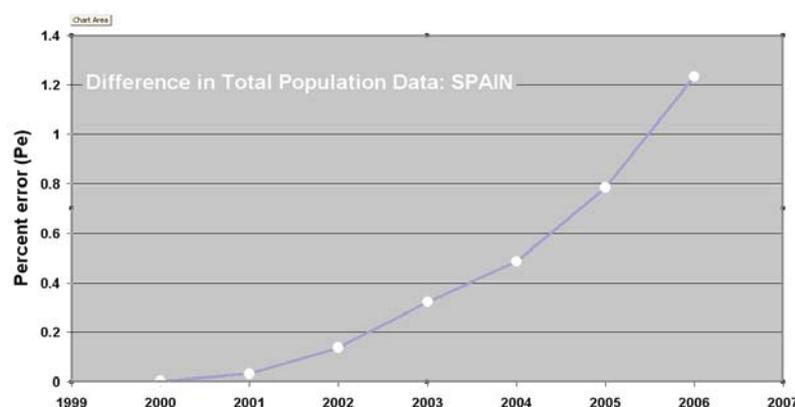


Figure 1. UNEP's Global Environment Outlook (GEO) (sub) regions



By using data from international organisations, it will be possible to assess the state of the territories in eastern and southern neighbouring countries, as well as to situate the European region in the World (Figure 1).

A temporal dimension is often given by global data sources such as the UNEP's GEO Data Portal (<http://geodata.grid.unep.ch>), with its time-series ranging from 1950 to 2050 for some variables. An important component of the ESPON Database activities is to ensure the comparability of European and global data. A careful examination of data discrepancies has been initiated by comparing EUROSTAT/ESPON databases with UNEP and other international databases. The first result is the establishment of a list of territorial entities with their differences of definition. For instance, in the EUROSTAT database, Cyprus refers only to the areas of Cyprus controlled by the Government of the Republic of Cyprus, and France includes the overseas departments, which might differ in international databases.

Differences in values observed between global and European databases can, in some cases, be explained by these differences of definition. Other cases are more curious, such as the differences between EUROSTAT and the UN population totals for Spain, which increases through time.

Disaggregated variables, such as population by age or sex classes, show even higher discrepancies. On 6 May 2010, DEWA/GRID-Europe participated in an ESPON Database 2013 Workshop in Luxembourg on "Managing Time-Series and Estimating Missing Values" (www.espon.eu/main/Menu_Events/Menu_Workshops/workshop1005.html). At this meeting, DEWA/GRID-Europe's experience in managing time-series data was presented to around 30 experts from institutions involved in territorial analysis and statistics, such as the European Commission DG Regio, the European Environment Agency and EUROSTAT. By the end of the first phase of the ESPON Database project in December 2010, DEWA/GRID-Europe will finalise a tool for the systematic comparison of databases at different scales, which will also support UNEP in comparative studies of national, regional and global data to be used in environmental assessments.

The role of forest in reducing losses from landslides

By Pascal Peduzzi

The earthquake that hit North Pakistan and India on 8 October 2005 had a recorded magnitude of 7.6 Mw on Richter scale. It devastated a large stretch of the region, killing between 74,647 people, injuring 134,622, left 5.15 million homeless and resulted in an economic loss evaluated at US\$ 6.2 billion. While impressive, these figures fail to capture the impact on trauma of the surviving population. More than 30% of the victims were killed by landslides, and indeed, more than 2400 landslides were identified by remote sensing techniques following this earthquake. Understanding why landslides claim such high death tolls is thus an important task, not only to identify potential future slope failures, but also to see if a portion of past susceptibility can be attributed to human activities. This is particularly relevant in the area affected, as just five months before the October 2005 earthquake, a report by the International Union for Conservation of Nature (IUCN) highlighted the risk “from a possible human catastrophe due to the growing danger of landslides that was haunting the locals owing to heavy constructions, ruthless deforestation and massive quarrying.” (IUCN, 2005).

The accelerating rate of natural resources destruction calls for rapid and universal action. The methodology described in this paper is based on geospatial and statistical analysis, involving simple Geographical Information System (GIS) and remote sensing algorithms. It is based on free or very low-cost data. It aims to scientifically assess the potential role of vegetation in

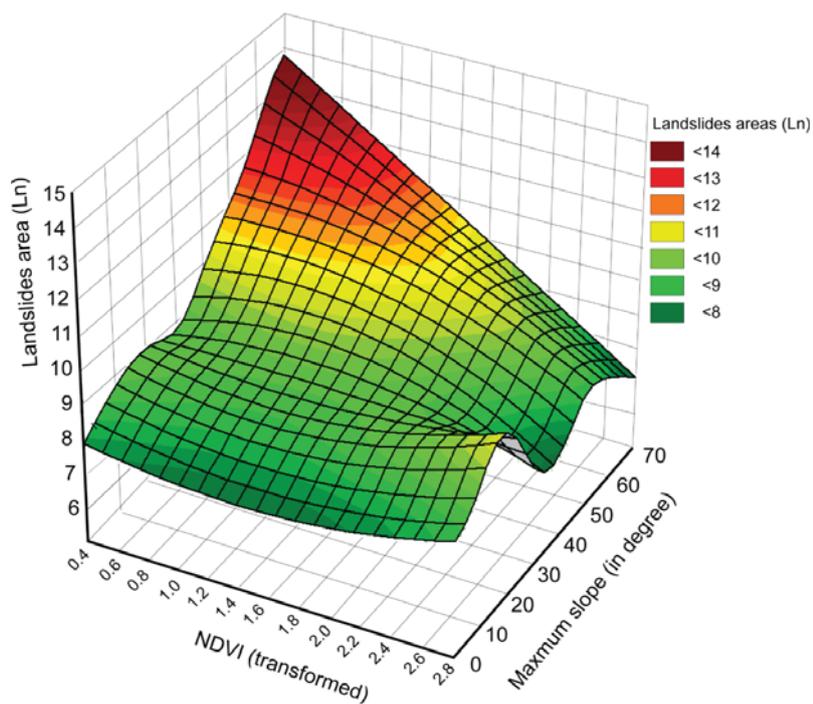


Figure 1. Landslides versus slopes and vegetation density (NDVI=Normalised Difference Vegetation Index)

mitigating landslides triggered by earthquakes, by normalising other factors such as slopes and distance from active faults.

Applied to the 2005 North Pakistan/India earthquake, this methodology shows that if slopes and proximity from active fault are the main susceptibility factors for post-facto landslides triggered by earthquakes in this area, the results clearly revealed that areas covered by denser vegetation suffered less and smaller landslides than areas with thinner (or devoid of) vegetation cover (see figure 1). A short distance from roads/trails and rivers also proved to be pertinent factors in increasing landslides' susceptibility, which allows to provide a model of landslides susceptibility (figure 2). This project is a component of a wider

initiative involving the Global Resource Information Database (GRID) Europe of the United Nations Environment Programme (UNEP), the International Union for Conservation of Nature (IUCN), the Institute of Geomatics and Risk Analysis from the University of Lausanne and the “Institut Universitaire d’études du développement” from the University of Geneva.

The full article can be freely accessed at: www.nat-hazards-earth-syst-sci.net/10/623/2010/nhess-10-623-2010.pdf

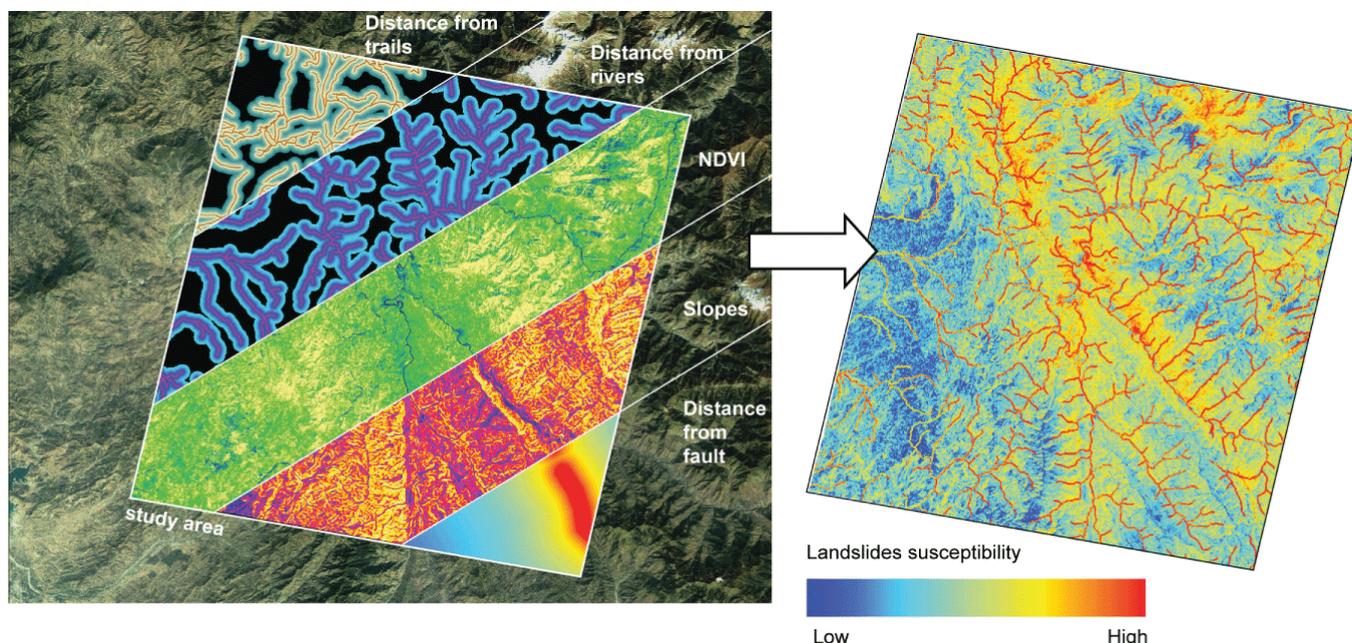


Figure 2. GIS Modelling of landslides susceptibility

Transboundary Waters Assessment Programme (TWAP)-focus on Groundwater

By Jaap van Woerden

The transboundary water systems on which the socioeconomic development and well-being of a significant part of the world's population depends, continue to be degraded by anthropogenic and natural pressures, including global climate change. While there is no systematic and scientifically-robust methodology for assessing the changing conditions of different types of transboundary water systems, the Global Environment Facility (GEF) has called for a Transboundary Waters Assessment Programme (TWAP), which in its first phase (2009-2010) will define the assessment methodology and build the necessary partnerships and networks. This project is being executed by UNEP/DEWA in cooperation with many agencies including United Nations Educational, Scientific and Cultural Organisation (UNESCO), IUCN (International Union for Conservation of Nature), International Groundwater Resources Assessment Centre (IGRAC), International Lake Environment Committee (ILEC) and several others.

In order to develop a sound assessment methodology, the transboundary waters of the world have been divided into five systems: groundwater, lakes/reservoirs, rivers, Large Marine Ecosystems (LMEs) and open ocean areas. Each of those will be addressed by expert working groups, while the results will feed into a common methodology, core set of indicators and proposed arrangements for conducting a comprehensive transboundary waters assessment in a next phase.

DEWA/GRID-Europe supports the TWAP activities with advice and inputs on core data sets and indicators that can help improve the overall methodology, ensure the use of scientifically-sound, consistent data from primary sources, and make connections to other environment assessments including the Global Environment Outlook and the work of the International Panel on Sustainable Resource Management.

Several meetings and thematic workshops have already taken place in order to shape the TWAP comprehensive assessment methodology. For the groundwater component, an expert meeting was organized from 14 to 16 April by the International Groundwater Resources Assessment Centre (IGRAC) in the Netherlands in cooperation with UNESCO-IHP and hosted by Deltares, a Dutch research institute for water, soil and subsurface issues. Jaap van Woerden of GRID-Europe represented UNEP/DEWA in this workshop. About thirty-five renowned water experts from various international organizations discussed how

innovations in the field of remote sensing and global hydrological modeling could contribute to these assessments and how proxy information can be used to estimate global groundwater demand and use. Such technologies and sources include airborne geophysics and remote sensing, large-scale and global hydrological modeling, and existing or proposed global groundwater observation programmes and expert networks. The Working Group agreed that most of the presented technologies, programmes and alternative data sources can be very useful for developing the groundwater assessment methodology and help shape the overall TWAP initiative. The workshop's outcomes will be used to shape the groundwater assessment methodology under the TWAP initiative and integrate this with the overall



assessment methodology for transboundary waters, which will be finalized by the end of 2010. The next plenary TWAP meeting is scheduled to take place at UNEP in Geneva from 12 to 14 July 2010.

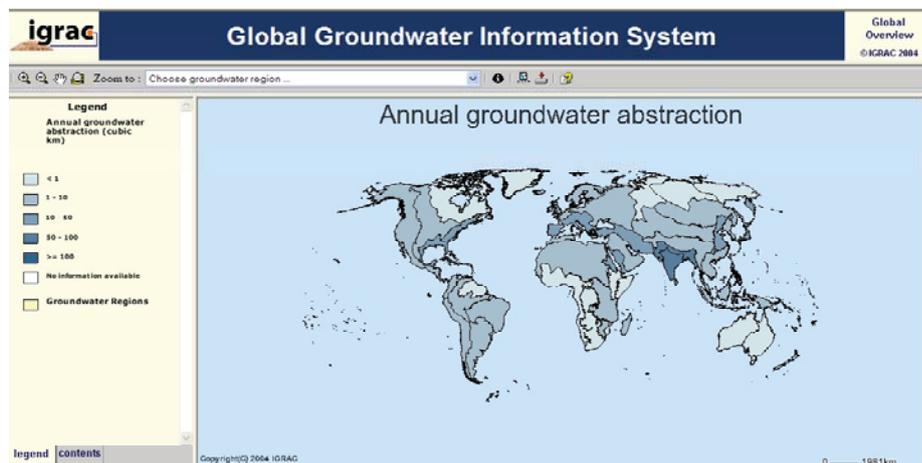


Figure 1. Global Groundwater Information System

Combining technologies for efficient mapping

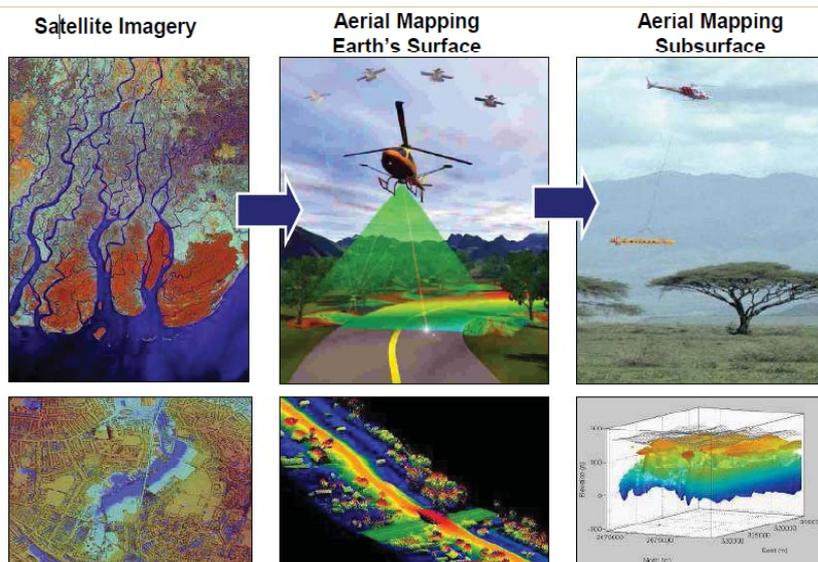


Figure 2. Combining technologies for efficient mapping

25th DEWA/GRID-Europe “Partnership” Advisory Board meeting

By Ron Witt and Géraldine Boezio

The 25th DEWA/GRID-Europe “Partnership” Advisory Board meeting was hosted by the Swiss Federal Office for Environment (CH-FOEN) on 15 April 2010 in Bern. Representatives from CH-FOEN, the University of Geneva (UniGe) and UNEP participated. The current status of the Partnership office staff, budget and recent major project activities were presented by the DEWA/GRID-Europe Regional Coordinator, Mr Ron Witt, as well as major highlights of project progress made since the 24th Advisory Board meeting (November 2009). He went on to describe existing and potential new projects - including the EnviroCAT and its related website hosting since the early 2000s; participation in UNECE’s “Second Assessment of Transboundary Rivers, Lakes and Groundwaters” under the UNECE Water Convention; and the GEO-Cities projects for Tbilisi and Tirana – as well as progress being made on major EU/FP-7 projects such as ACQWA and enviroGRIDs.

He also explained the name change of the Early Warning Unit to “Global Change and Vulnerability Unit” and a number of projects that are being carried out by this Unit in 2010, including the GAR 2010; a continuation of the global PREVIEW; participation in the IPCC’s Special Report on Extreme Events (SREX); a new study on glaciers’ status in Central Asia; and the next phase of the European Atlas of Environmental Change (with UNEP/ROE).

The DEWA Director, Mr Peter Gilruth, and the Head of DEWA’s Early Warning Branch, Mr Norberto Fernandez, (UNEP/DEWA Headquarters) stated that UNEP and DEWA accord highest priority to relationships with a few key partners, in particular the UniGe, which is why the Partnership has received a major level of investment in 2010-11 again.

Deputy Director Gaetano Leone of the UNEP Regional Office for Europe (ROE) described the major success of the last UNEP Governing Council/Global Ministerial Environmental Forum held in Bali (Indonesia) on 22-26 February 2011. He also recalled UNEP’s leadership in the environmental pillar for the “One UN” programme in Albania, and that the advantage or added value of UNEP in these processes (including UN Development Assistance Frameworks or “UNDAFs”) is the ability to look at impacts and issues which extend beyond boundaries. Upcoming UNDAFs include those being developed for Azerbaijan, Bosnia, Moldova and Ukraine, with

DEWA/GRID Europe involved in developing a State of Environment Report for Bosnia-Herzegovina.

Dr Franz Perrez of CH-FOEN explained that a major effort was being made to compile agreed environmental goals from the MEAs et al. They agreed with DEWA-Europe’s suggestion that the process to develop a compilation of internationally-agreed environmental goals and objectives requires closer linkages with the GEO-5 process. For Switzerland, it is important that the global part of the assessment will relate to and be consistent with the work done by UNEP’s Division of Environmental Law and Conventions (DEL/C) on internationally-agreed environmental goals and objectives.

In his intervention, Dr Nicolas Perritaz of the CH-FOEN also mentioned ongoing and new projects, amongst others the finalisation of the Swiss Environmental Domains (CH-ED) project by DEWA/GRID-Europe and stated that FOEN was fully satisfied with the results. Mr. Perritaz explained that Switzerland’s current environmental indicators are now available on the FOEN website in English, and that the SoE Report “Environment Switzerland 2011” is to be launched in June 2011. He also elaborated on the heavy reporting burden for Switzerland and other European countries (e.g., national SoE, European SoE 2010 via EEA, the EEAOA report for the Astana Ministerial Conference in September 2011, and now the start-up of GEO-5). Finally, they asked UNEP to be aware of the potential for duplication of efforts and to strive to find synergies, particularly with the EEA at the global and pan-European levels.

On behalf of UniGe, Prof. Walter Wildi reported that since 17 March 2009, the UniGe has been functioning under new legislation. The Institute of Environmental Sciences (ISE) was founded under this law, and has as one of its main responsibilities to serve as a platform for inter-disciplinary coordination and collaboration. He also mentioned that as the UniGe/ISE will be evaluated in a few years’ time, it would be useful to have scientific collaborators working at GRID-Europe earn PhDs in the meantime (as a few are in the process of doing), in order to raise the scientific stature of ISE before this evaluation takes place. Prof. Wildi further explained that a new course in Geomatics had been approved by the UniGe Rectorate, with approximately thirty-five students per year expected to take part.

Much discussion took place on the subject of the planned “Science Day” featuring both the added value of the partnership and science-related activities of the DEWA/GRID-Europe office. The event will replace the second Advisory Board meeting of 2010, and is scheduled to take place at the University of Geneva on Thursday 9 December 2010.

The Dinaric Arc and Balkans Environmental Outlook (DABEO) reporting process kicks off in Ljubljana

By Ron Witt and Géraldine Boezio

The first meeting of the Dinaric Arc and Balkans Environmental Outlook (DABEO) reporting process was organised by UNEP, along with the Slovenian Ministry for the Environment and Spatial Planning (MESP) and in cooperation with the European Academy of Bolzano (EURAC), in Ljubljana (Slovenia) at the Surveying and Mapping Authority of the Republic of Slovenia on 4-5 February 2010. The meeting followed the DABEO Scoping Consultation held in Tirana on 3-5 February 2009, where representatives from the countries involved, international partners and observers expressed their commitment to and support for the process. Representatives of Bulgaria, Croatia, Former Yugoslav Republic of Macedonia (FYROM), Kosovo (Territory under UN interim administration according to UNSCR 1244/99), Montenegro, Serbia, Slovenia and international partners (including the EEA, UNESCO and observers from universities and research centres) participated.

The main objectives were to agree on both the substance (contents/scope) and process for the DABEO report, including discussions of two papers on the geographic scope and thematic focus that had been prepared by UNEP, and on "next steps" for the process.

The meeting was opened by Mr. Emil Ferjancic, Head of the Slovenian Delegation in the Alpine Convention, who said that both for Slovenia and the Convention, cooperation with other mountain regions is a very important point in his work programme. According to Marco Onida, Secretary General of the Alpine Convention, information, observation and research are mentioned in every Alpine Convention Protocol and are a very important basis to build cooperation between countries. He also underlined the close cooperation between the Alpine and Carpathian Conventions, and how the Dinaric Arc and Balkans also represent a priority cooperation area.

Harald Egerer, UNEP/ROE-Vienna, mentioned the close cooperation between UNEP and many of the organizations participating in the meeting, while stressing the importance of regional cooperation in the Dinaric Arc and Balkans and of the DABEO as an instrument to facilitate this process. With reference to this, he also underlined the scientific baseline provided by the Carpathian Environmental Outlook for the Carpathian Convention process.

Ron Witt, UNEP/DEWA-Europe Regional Coordinator, explained that the purpose of the meeting was to reach agreement on all modalities relating to a regional Integrated Environment Assessment (IEA) reporting process for the Dinaric Arc and Balkans, including critical questions such as the geographic scope, thematic focus, resources required and timeframe. Dusan Djordjevic, UNEP/DEWA/GRID-Europe consultant, presented the paper on the proposed geographic scope and thematic coverage of the DABEO Report. Participants requested to add topics such as human issues (migration, demographics), energy and industry, groundwater, land use, soils, status of protected areas and ecological networks. Mr. Witt explained that most of the requested topics could be included in existing proposed chapters, including an initial background chapter on "driving forces and pressures", and that UNEP would be proposing a specific structure for the participants for their comments and feedbacks.

Milan Chrenko of the European Environmental Agency (EEA) presented the EEA activities and in particular their State of Environment Report (SOER 2010), while Mr. Bernard Debarbieux, University of Geneva, made a presentation on the GLOBETE (GLOBalization and RE-Territorialization of environmental action in Europe) project, underlining the importance of connecting natural and institutional regions.

The meeting participants agreed with all of the following:

- UNEP will take the responsibility for the process that should be completed at the end of 2011, with the assistance of and inputs from countries and other international partners.
- Each country will nominate a national contact point (NCP), who will collectively constitute a Steering Group to help guide the DABEO process along with UNEP. The next meeting of appointed DABEO NCPs and nominated Chapter Lead Authors will take place in the region in the first quarter of 2011.

Start-up of GEO-5 and the European process as planned through 2010

by Ron Witt

The process towards a fifth Global Environment Outlook (GEO-5) report was kicked off in late 29-31 March 2010 with the holding of the first Intergovernmental and Multi-stakeholder Consultation for GEO-5 at UNEP Headquarters in Nairobi, Kenya. Attended by nearly 150(?) stakeholders from governments, intergovernmental agencies and the Multilateral Environmental Agreements (MEAs), academia/research and UNEP's network of GEO Collaborating Centres from around the world, this Consultation laid out the basic design and preparation of a plan for the development of the GEO-5 report by mid-2012, with a tentative launch date of World Environment Day 2012(5 June).

GEO-5 is to be a more "solutions-oriented" prospectus for the planet, rather than focussing on environmental state and trends as previous GEOs, and will still contain an outlook component as well via a so-called "Challenge Scenario". But the bulk of GEO-5 will be dedicated to an examination of policies for dealing with environmental issues at both regional and global scale, and the interplay between these two levels. While part I of GEO-5 will contain an update of environmental state and trends in the traditional air-land-water-biodiversity and chemicals/wastes compartments, part II will deal with significant regional issues and key challenges (five per region), corresponding policy measures which have been shown to be effective in coping with these, and existing gaps which need to be filled if policy responses are to be made more effective. Promising policy measures at the regional level will be put forward for improving global environmental governance and/or applied within other regions.

As there are significant regional inputs to what will become the GEO-5 volume, the plan is to establish a Chapter Working Group (CWG) for the European Chapter 4 in part II, along with state and trends sections under part I. From April, the nominations process for European contributors (Chapter Lead Authors, other Lead Authors and Contributing Authors) was opened, with the expectation of receiving over 100 names by June via an on-line nominations portal.

Chapter Lead Authors (CLAs) and other authors are to be selected following the

first GEO-5 European Regional Consultation in late September, and a CWG formed to start preparing the Chapter 4 outline and initial drafting of contents later in 2010 and early 2011. At the same time, an outreach campaign to raise awareness of the GEO-5 process and the main messages being developed will get underway, with hundreds of stakeholders across the region ultimately being involved.

It is anticipated that Europe, as a leading actor in environmental governance and multi-national policy-making and implementation, will play a major role throughout the GEO-5 process, offering interchange of policy expertise with the global level and other regions. An update of environmental state and trends in the traditional air-land-water-biodiversity and chemicals/wastes compartments, part II will deal with significant regional issues and key challenges (five per region), corresponding policy measures which have been shown to be effective in coping with these, and existing gaps which need to be filled if policy responses are to be made more effective. Promising policy measures at the regional level will be put forward for improving global environmental governance and/or applied within other regions.

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enviroGRIDS

Bringing GEOSS and INSPIRE into practice in the Black Sea Catchment

By Anthony Lehmann

The EnviroGRIDS project is developing a system that aims to assist governments and communities to track and respond to environmental trends in the Black Sea region.

EnviroGRIDS is building a data-driven view of Black Sea catchment that feeds into models and scenarios to explore its past, present and future. The outputs of the projects will provide spatially explicit data and knowledge to support the work of the Group on Earth Observation System of Systems (GEOSS), as well as the Infrastructure for Spatial Information for the European Community (INSPIRE) directive. The latter will enable the establishment of an infrastructure for spatial information in Europe to support community environmental policies, and policies or activities which may have an impact on the environment. The project aims at building the following capacities of:

- scientists to assemble systems such as GEOSS in the Black Sea Catchment;
- decision-makers to use them;
- general public to understand the important environmental, social and economic issues at stake.

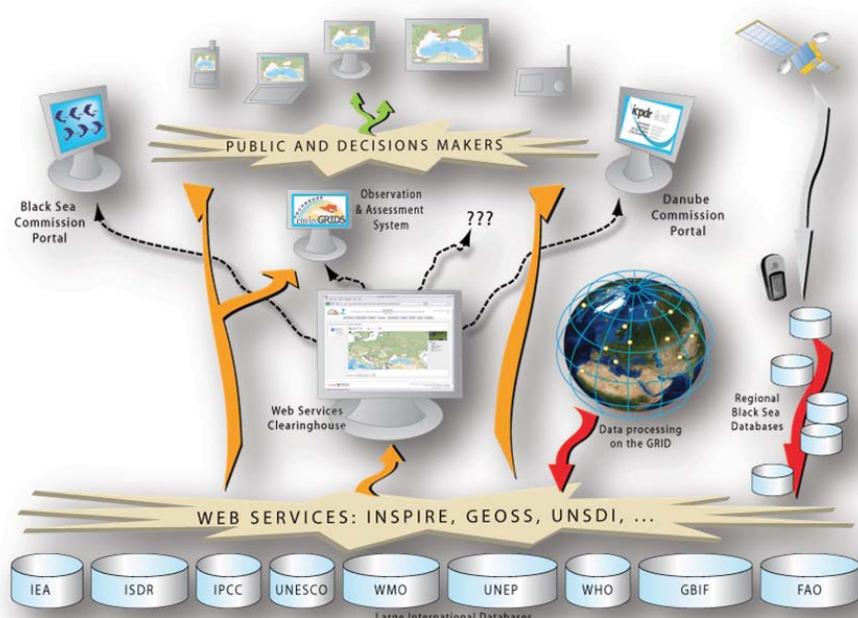
The enviroGRIDS approach

The aim of the enviroGRIDS project is also to target as a priority the end-user needs of the Commission on the Protection of the Black Sea Against Pollution (BSC) and the International Commission for the Protection of the Danube River (ICPDR), both of whom are partners in the project. The enviroGRIDS project will help these two Commissions to make better use of their spatial data infrastructures.

Another priority for the enviroGRIDS project is to build capacity on Earth Observation. With twenty-seven partners in fifteen countries, the project has a broad base to demonstrate through examples and to teach about the concept behind modern spatial data infrastructures for Earth Observation. Several workshops will be held around the Black Sea region during the project's implementation through 2013.

The University of Geneva and UNEP/GRID who are associated to coordinate this project - are also willing to guarantee the sustainability of the Observation System after the end of the project itself, as long as it is needed and useful. Being connected to the United Nations, the coordination team is also active in developing links with the United Nations Spatial Data Infrastructure (UNSDI) initiative that shares similar principles with GEOSS.





- drological scenarios with SWAT
- BSC-OS: Black Sea Catchment Observation System.

Essential Internet links
 GEO: www.earthobservations.org
 GEOSS publications: www.earthobservations.org/docs_pub.shtml
 INSPIRE: inspire.jrc.ec.europa.eu
 GMES: www.gmes.info
 UN-SDI: www.ungjwg.org
 Open Geospatial Consortium: www.opengeospatial.org
 The SDI cookbook: www.gsdi.org/gsdi-cookbookindex

Finally, enviroGRIDS is also developing strong collaborations with other EU Framework Project (FP7) which are active in the same field such as EuroGEOSS, Assessing Climate impacts on the Quantity and Quality of WAter (ACQWA), People for Ecosystem Based Local Government (PEGASO), Upgrade Black Sea Scene and the Ground European Network for Earth Science Interoperations - Digital Repositories (GENESI-DR).

- D2.3 Sensor data use and integration guideline
- D2.4 Remote sensing data use and integration guideline

Besides static documents, enviroGRIDS regularly offers workshops for those who want to learn more about the project and the use of GEOSS. There will soon be available an e-learning platform with several courses

Country	enviroGRIDS partners	EU member state	GEOSS member state
Albania	0	NO	NO
Austria	1	YES	YES
Belarus	0	NO	NO
Bulgaria	2	YES	NO
Bosnia-Herzegovina	0	NO	NO
Croatia	0	NO (candidate)	YES
Czech Republic	1	YES	YES
Germany	0	YES	YES
Georgia	1	NO	NO
Hungary	1	YES	YES
Italy	1	YES	YES
Macedonia	0	NO (candidate)	NO
Moldova	0	YES	YES
Poland	0	YES	NO
Romania	4	YES	YES
Russian Federation	1	NO	YES
Slovakia	0	YES	YES
Serbia-Montenegro	0	NO	NO
Slovenia	0	YES	YES
Switzerland	4	NO	YES
Turkey	2	NO (candidate)	YES
Ukraine	6	NO	YES

All of the following documents are available from the enviroGRIDS website (www.envirogrids.net)

Project factsheets translated in thirteen languages as well as the project newsletters. Several guidelines concerning working with INSPIRE and GEOSS:

- D2.1 Interoperability guideline
- D2.2 Data storage guideline

related to the activities of the project. A database with publications derived from the project as well as other key documents is under preparation. Different web applications will be embedded in the website:

- Uniform Resource Management (URM) for entering and querying available services of data and metadata
- BASHYT: Collaborative Working Environment to run regional hy-