



DEWA~Europe/GRID-Geneva
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UNEP/Global Resource Information Database-Geneva

European GRID Centres Meet to Discuss Key Issues

The Regional Coordinator of DEWA~Europe/GRID-Geneva co-chaired the 6th annual Euro-GRID Centres' meeting that was hosted by GRID-Arendal, in Longum Park, Norway.

The purpose of annual Euro-GRID meetings is to improve coordination and information sharing among the five European GRID centres. On this sixth occasion, an additional two related institutions were included: the Central European University (CEU) and the Russian Ecological Federal Information Agency (REFIA).

After a comprehensive exchange of information carried out through presentations and status reports made by each centre, a representative from DEWA~Nairobi gave a briefing on current status and future directions of UNEP/DEWA activities and programme of work (PoW). The following discussions highlighted several issues of common interest and concern. GRID centre directors raised a common appreciation in becoming directly invol-

ved in UNEP and DEWA project activities, and in having more regular access to information and products that are generated at UNEP Headquarters in Nairobi.

There were several suggestions from participants as to how to further improve information exchange, and more substantively, various means for Central and Eastern (C/E) European GRID centres to submit inputs for UNEP's (mainly DEWA's) PoW and other proposals. These centres would therefore directly receive funds to carry out project activities as a result. With DEWA under new management and increased impetus and interest to better harmonise and streamline DEWA's networks, it is anticipated that soon new guidelines will be issued and actions taken to better integrate the (C/E



European) GRID centres in DEWA's PoW and, at the same time, have them subscribe to certain standards and obligations for UNEP and DEWA. It has also been proposed to hold a global meeting of GRID centres at UNEP Headquarters in Nairobi by mid-2004. ■

GEO Africa Data Portal & Data Working Group Meetings

After the first steps taken in 2003 in Latin America and the Caribbean (LAC) towards a GEO LAC Data Portal, relevant DEWA-

Europe/GRID-Geneva staff attended a kick-off meeting held at U N E P Headquarters in Nairobi to plan for a GEO Africa Data Portal in support of GEO and related assessment and reporting activities. This work mainly focuses on the second African Environment Outlook (AEO) as requested by the African Ministerial Conference on the Environment (AMCEN) and following the Environment Initiative of the New Partnership for Africa's Development (NEPAD). The

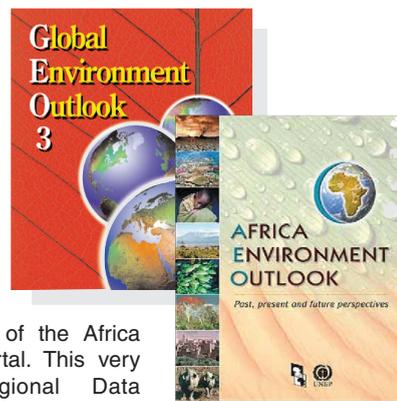
development of a GEO/AEO Africa Data Portal will further build on the African Environment Information Network, which is currently being established among many countries in the region. In the meantime, discussions for developing other regional GEO Data Portals have been initiated within UNEP/DEWA and UNEP offices for the Asia and Pacific and West Asia regions.

During a two-day technical meeting in November 2003, several Data Portal prototypes from different UNEP and GEO collaborating centers were presented and reviewed, including an African manifestation of the GEO Data Portal, the sub-regional Sustainable Development Indicators Information System (SDIIS) from CEDARE (Egypt) and the CATISOE information system developed in Cote d'Ivoire. It was recommended that the GEO/AEO Africa Data Portal prototype was to build further on the SDIIS system, while allowing full compatibility with and smooth integration into the overall GEO Data Portal structure and taking into account useful tools and data from other existing prototypes.

Back-to-back with the workshop on the Data Portal, an inception meeting was organized to start an Africa Data Working Group and address the data and information needs for GEO/AEO reporting, and to define the

contents of the Africa Data Portal. This very first regional Data Working Group (AEO DWG) meeting focused on the development of an Africa GEO/AEO Data Matrix as derived from the global GEO Data Matrix developed under the GEO Data Working Group throughout the years. Suggestions for changes and additions were put forward and discussed in order to better reflect the regional context in Africa, and come up with a dedicated Africa Data Matrix.

The Africa Data Matrix is to be finalized by a subgroup of the AEO DWG in the coming weeks and serve as basis for the development of the GEO Africa Data Portal in support of the AEO and regional GEO assessment work, as well as to feed into and contribute to the overall GEO data process. ■



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EnviroInfo 2004 "Call for Papers" Launched

The 18th Conference *EnviroInfo* will be hosted by CERN (European Centre for Nuclear Research), as part of its 50th birthday celebrations, on 21-23 October 2004. The conference will be organised by the State of Geneva, assisted by many collaborative partners (UNITAR, IFEN, MEDD, SAEFL, Conseil Général de Haute-Savoie, etc.) . UNEP/DEWA~Europe is particularly involved both in the "Organising Committee" and the "Programme Committee", and is also responsible for the development of the web portal.

The conference will cover a wide scope of environmental information systems' topics with a special focus on the theme of "Sharing". It is therefore expected to approach subjects such as North-South technology transfer, open software development for environmental protection, experience sharing network, open Geographic Information Systems and exchange of data and knowledge. *EnviroInfo* will be open to scientists, managers and decision-makers from various disciplines, experts from IT industry, governmental

and intergovernmental administrations, non-governmental organisations, environmental agencies and networks, managers and experts from environmental technology companies, consultants, students and the concerned public.

An important milestone has just been achieved with the diffusion of the "call for papers" and the launch of the official website developed and hosted by GRID-Geneva. Sixty papers among those received will be selected to be presented during the conference. All participants are invited to contribute to *EnviroInfo* 2004 by submitting papers related to the topics of the conference. The deadline for the submission of abstracts is 27 February 2004.

For details regarding the layout and the registration of abstracts, the preliminary programme, partners and sponsors, and accom-

EnviroInfo Conference 2004

18th International Conference
Informatics for Environmental Protection

The *EnviroInfo* 2004 conference logo

modation availability, please consult the conference website at:

<http://www.enviroinfo2004.org> ■

Land cover Mapping Using High-resolution Imagery

In partnership with the Remote Sensing Department of the University of Geneva, GRID-Geneva is exploring the potential of very high-resolution imagery for land cover mapping and ground object identification, such as refugee camps or destroyed buildings. This is a timely task in the context of both an increasing availability of such imagery (from orthophotos, QuickBird or Ikonos satellites), and both current/anticipated needs of environmental or humanitarian agencies.

To this end, the potential of the trend-setting *eCognition* software, developed by Definiens Imaging based in Munich, Germany, has been explored. By using a new, object-oriented approach, it contrasts with classical pixel-based softwares. The concept behind *eCognition* is that important semantic information necessary to interpret an image is not represented in single pixels, but in meaningful image objects and their relationships. To see how *eCognition* works, it was applied to the production of a land cover map in the Canton of Geneva, Switzerland. Three different types of data were used for the classification: a 0.25m-resolution orthophoto, a vector layer representing vineyards and a 1m-resolution digital elevation model (DEM).

The first step consists of a segmentation, grouping neighboring pixels having homogeneous color and shape into objects. Different weights in spectral and shape heterogeneity are possible, and their impact on the final map were thoroughly tested. The multi-resolution concept implemented in *eCognition* allows

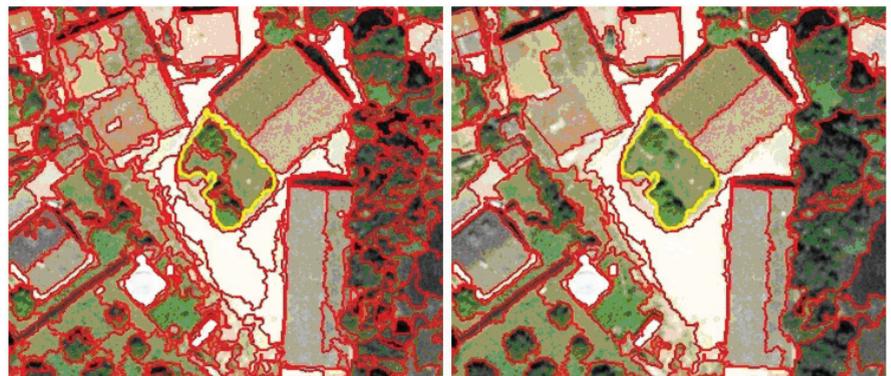


Image segmented level 2

image segmented level 3

The limit of the sub-object follows exactly the limit of super-object (in yellow)

segmentation at different scales, creating a hierarchical network. Three levels were created in our example: the 3rd level (smallest scale) was used to classify pervious vs. impervious zones, the 2nd level (middle scale) to classify all the classes (vineyards, trees, green areas, barren ground, water, sealed areas and buildings), while the first level was used to correct the errors of segmentation of the 2nd level.

The second step consists of the classification itself, based on a fuzzy approach of nearest neighbor, or combinations of fuzzy sets on object features, defined by membership functions. Each class has its own description. For example, the class "tree" is described by logical operations, using the DEM and the greenness. An object will receive a membership

value of 1 for "three", if the DEM mean value is higher than 3 meters and if the greenness mean value is higher than 0.37. Finally, a manual correction was needed where *eCognition* couldn't differentiate classes because of similar object values. Our first results clearly show that the object approach is far more efficient in extracting relevant information from high-resolution imagery than traditional pixel-based methods.

Work is now in progress to design a robust, step-by-step methodology for land cover mapping under *eCognition*, based on a combination of numerous sources, such as orthophotos, satellite imagery, DEM and vector layers when available. ■

Environment Management Group Website

DEWA~Europe/GRID-Geneva developed a new website for UNEP's Environmental Management Group (EMG). On this website, latest UN environmental news are updated frequently by a dynamic link to the United Nations System-Wide Earthwatch website (<http://www.unemg.org/earthwatch.php>)

The homepage design is meant to symbolise a meeting table seen from above. Such concept suggests that the EMG is not only working on environmental issues, but at the same time, focusing on the information and communication aspects.

The EMG was established to enhance UN system-wide inter-agency coordination related to specific issues in the field of environment and human settlements. The EMG identifies issues on the environment and human settlements' agenda requiring enhanced inter-agency cooperation. It then addresses these issues through time-bound issue management groups (IMGs) which include as members the UN entities concerned, as well as other stakeholders with a proven expertise in the respective area. The EMG provides a forum for its members to share their views or concerns on issues of common interest,

review progress or identify obstacles, set policy directions to address such issues, convey their views on certain issues to intergovernmental forums and processes (UNEP and UN-HABITAT Governing Councils, Commission on Sustainable Development, Conferences of Parties of MEAs) and to other relevant forums, and set a roadmap for the future. Finally, the EMG contributes to the implementation of the outcomes of the World Summit on Sustainable Development (WSSD) in the areas of environment and human settlements.

The 6th meeting of the EMG will be held on 6 February, 2004 at the Geneva International Environment House. The main focus of the meeting will be discussing and finalising EMG's contribution to the consultations on fresh water, sanitation and human settlements at the Global Ministerial Environment



Environmental Management Group homepage at <http://www.unemg.org>

Forum (GMEF) to be held in Jeju, Republic of Korea, in March 2004 and at the 12th Session of the Commission on Sustainable Development in New York in April 2004. ■

UNEP's "Environment and Security" Initiative Shifts Focus to the Caucasus

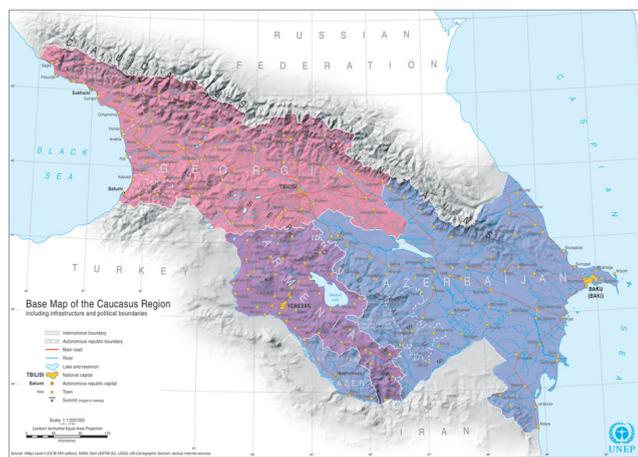
The joint UNEP, UNDP and OSCE "Environment and Security" (Env&Sec) Initiative, after releasing its first report at the European Ministerial Conference on Environment in Kiev May 2003, is now preparing baseline information on environmental and security issues in the Caucasus region. Once again DEWA~Europe/GRID-Geneva is fully involved in this project.

The Caucasus Env&Sec "Desk&Field" Assessment and Consultation Workshop took place at the Regional Environmental Centre (REC)-Caucasus offices (Tbilisi, Georgia) on 24-25 November 2003. The major purpose of holding this workshop for the Caucasus countries was to create a baseline of information, in cartographic and textual format, on environmental problems and security issues in the Caucasus region, making use of existing materials and the advice, expertise and inputs to be gained from Armenian, Azerbaijani and Georgian national experts.

The objectives of the Caucasus Env&Sec Workshop were, firstly, to present the Env&Sec Initiative, including preliminary cartographic/map products prepared, to selected representatives of Ministries of Environment and/or Natural Resources and civil society from the Caucasus countries, and by informing engage them fully in the Initiative.

Secondly, the meeting was intended to further develop and refine preliminary cartographic products through interactive presentations and discussions, both by international agencies and national experts/representatives taking part in the meeting. Finally, participants were asked to produce a series of outputs that will serve to pave the way for the full and formal introduction of the Env&Sec initiative, including a series of national-level consultations that will take place in the Caucasus region by mid-2004.

The main idea was to consult with a small group of experts from the three Caucasus countries, and take advantage of their knowledge and expertise to begin mapping environmental problems and security issues in the sub-region. This was already partly achieved by the commissioning of "national background papers" of some 10-12 pages having a clear structure and terms-of-reference, and containing both geographic and thematic information on environmental "hot spots" in each of



Base map of the Caucasus Region created by GRID-Geneva for the Env&Sec Initiative

the three countries that the country representatives were asked to bring to the meeting.

In order to include many of the same participants from the three Caucasus countries, as well as UNEP and other organisers and trainers, the Integrated Environment Assessment (IEA) "New Elements and Tools" workshop was organised back-to-back with the Env&Sec workshop in Tbilisi. ■

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Calendar of Events

(January - March 2004)

12-16 January

Intergovernmental Consultation and Inter-Agency Meetings, related to UNEP Science Initiative, UNEP Headquarters, Nairobi, Kenya

21-23 January

Inter-Agency Meeting on Outer Space Activities, WMO, Geneva, Switzerland

26-30 January

IEA Guidelines, Methods and Tools workshop for NIS countries (Belarus, Moldova, Russian Federation & Ukraine), Kiev, Ukraine

3 February

Launch of UNDP "Reducing Disaster Risk" report, Oslo, Norway & Geneva, Switzerland

10-13 February

2nd Meeting of Working Group on Environment and Health Information System (EHIS), WHO/ECEH, Bonn, Germany

16-17 February

Environment and Security Workshop on Assessment Methodology and Early Warning, OSCE Offices, Vienna, Austria

3-5 March

Carpathians Environment Outlook "Kick-off" Workshop, Ministry of Environment and Water, Budapest, Hungary

22 March

World Water Day

23 March

World Meteorological Day

GRID-Geneva's Latest Outputs

Base Map of the Caucasus Region, 1:1 200 000 scale poster showing mountain relief, international and republic boundaries, inhabited places, roads and rivers.

This map was then completed with various features needed for the Env&Sec Initiative (see page 3) such as: **Population Density, Population Groups, Landcover, Protected Areas, Most Polluted Rivers, and Potential Hot Spots.**

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

Envirocat Partners Workshop

For several years, DEWA~Europe/GRID-Geneva has been a key partner in the development of the Swiss meta-data project namely CH-CDS (from the European Catalogue of Data Sources). This project initiated and implemented by the Swiss Agency for Environment Forest and Landscape (SAEFL) has been reorganised during the year 2003 and is now called *Envirocat*. The new application is already available for collaborating partners and will be accessible by the public as soon as a critical number of partners will have checked and published their own meta-data. In order to give information to the collaborators and obtain a direct feedback on the application and their wishes concerning the future development, a workshop was organised by SAEFL in Bern on 2 December 2003.

Relevant GRID-Geneva staff, several federal agencies and a number of



cantonal representatives attended the meeting. The various partners shared with the Envirocat team their first impression and experience with the application, and showed great satisfaction with this one. Their comments will be taken in consideration at the beginning of next year to improve the user-friendliness of the application. New features and more important improvements will be done through the next version, already planned for the end of 2004. SAEFL planned to enhance the current network of partners during 2004 and enlarge it in 2005. Envirocat seems to represent now an important piece of the global environment monitoring strategy led by SAEFL at the national level. ■

Competencies and Services of DEWA~Europe/GRID-Geneva's activities

DEWA~Europe/GRID-Geneva's principal activity is to provide high-quality environmental data and information, to underpin UNEP's review of the state of the environment and provide early warning on emerging environmental threats. At the same time, GRID-Geneva offers technical services and develops value-added environmental products to support the work of other entities on a case-by-case basis.

Over the years, the office has compiled an extensive archive of geo-spatial and tabular databases, and is currently using state-of-the-art information technology to make them accessible to the global community through Internet-based applications. Just to name a few, the office has been responsible for the complete design, data gathering and formatting, and on-line interface of the GEO Data Portal. The UNEP.Net system includes GRID-Geneva's socio-economic, urban and European portals. We have been a key partner in the development of the Swiss metadata catalog known as Envirocat. The statistical analysis and on-line data of the newly released UNDP report "Reducing Disaster Risk" was made possible thanks to

GRID-Geneva's expertise in the latest technologies, in user-friendly graphic visualization. The above mentioned projects required expertise in a wide numbers of ICT tools such as Linux/UNIX, Apache, PHP, MySQL, Postgresql, IIS, SVG, JpGraph, Internet Maps Servers, ESRI, MapInfo, etc.

At the same time, GRID-Geneva's know-how in such tools as geographic information systems (GIS), remote sensing, and modeling provides valuable knowledge and better insights for decision-makers. For example, the latest satellite imagery analysis consisted in exposing chlorophyll concentration of Lebanon's coastal water using SeaWiFS and Landsat TM sensors. The PreView - IMS Project, has been recognized by the international scientific community as a powerful and innovative modelling tool to identify risk and human vulnerability to natural hazards in relation to socio-economic and physical factors.

If you think that GRID-Geneva could assist your projects in some way, please feel free to contact our office through: info@grid.unep.ch

Announcement

As of 23 February 2004, DEWA~Europe's Information Officer, Mr. Hassan Partow, has taken up a new job within UNEP's Regional Seas Programme at UNEP Headquarters in Nairobi. We wish him the best of Luck ! He is being replaced by Ms. Diana Rizzolio K.