



# GRID-Geneva Annual Report

1998



# UNEP in Brief

## Mission Statement

"To provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations".

The United Nations Environment Programme (UNEP) was created in 1972 as one of the productive consequences of the 1972 Stockholm Conference on the Human Environment, to be the environmental conscience of the UN system, and to make other agencies aware of the environmental impact of their activities. From its headquarters in Nairobi, Kenya, UNEP has leveraged a small budget into a programme of major environmental significance and lasting influence. It assesses the state of the world's environment; helps formulate international environmental law; strengthens the environment management capacity of developing countries; and raises environmental considerations with the social and economic policies and programmes of UN agencies.

UNEP helps solve problems that cannot be handled by countries acting alone or even in small groups. It provides a unique forum to bring countries to the table for negotiations, to build consensus and forge international agreements. It nurtures partnerships with other UN agencies and promotes the participation of business, the scientific and academic communities, non-governmental organizations, children, youth and others in achieving sustainable development.

UNEP is headed by an Executive Director, Dr. Klaus Töpfer. Its ruling body, the Governing Council, has a rotating membership of 58 countries. UNEP has six regional offices: Africa (Nairobi); Asia and the Pacific (Bangkok); Europe (Geneva); Latin America and the Caribbean (Mexico); North America (New York); and West Asia (Bahrain).

A worldwide network of Global Resource Information Database (GRID) centres was initiated by UNEP in 1985 as part of its environmental information network and is administered by its Division for Environmental Information, Assessment and Early Warning (DEIA&EW).

## Front Cover

Pictures from top down:

- ◆ Huge tracts of forest land were burned in Kalimantan, Indonesia, 1997.
- ◆ Fires posed a serious threat to wildlife, including this Organ Utan trapped in a cloud of smoke in Tanjung Puting National Park, Kalimantan, Indonesia, 1997.
- ◆ Damage to crop and forest land by fire and haze led to massive economic impacts. Kalimantan Indonesia, 1997

Source: WWF-Canon/Tantyo Bangum

# GRID-Geneva Annual Report 1998

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# Contents

Message from the Executive Director of UNEP .....	1
Greetings from BUWAL's Director .....	2
About GRID-Geneva .....	3
Year in Review .....	4
Partnership Agreement Bolsters GRID-Geneva's Role.....	5
"Forewarned is Fore-armed": Monitoring Wildfires Worldwide .....	6
Cooperation with the European Environment Agency .....	8
Use of GIS for Conflict Prevention and Resolution.....	9
Establishment of the SCEP/GRID-Moscow Centre.....	10
"Euro-GRID '98" Meeting.....	11
Meta-Database Activities .....	12
An Internet Site on Switzerland's Biodiversity Activities .....	13
GRID-Geneva's Website.....	13
Cartographic and Poster Products.....	14
Selected Publications.....	15
GRID Geneva's 1998 Budget Expenditure .....	15
Who's Who at GRID Geneva .....	16
Organisational set-up of GRID Geneva .....	16
Acronyms.....	18

# Message from the Executive Director of UNEP

**S**ince the Rio Summit of 1992, UNEP has implemented a major effort to renew its role as the world's "environmental conscience", bringing together a wide range of actors and stakeholders under a common platform for action. UNEP's strategy to achieve its goals by "encouraging partnerships" has taken on a heightened sense of urgency due to increasing financial uncertainties and the ever-growing list of environmental issues.

On 15<sup>th</sup> June 1998, UNEP was able to enter into a partnership agreement with the Swiss Federal Agency for Environment, Forests

UNEP's strategy to achieve its goals by "encouraging partnerships" has taken on a heightened sense of urgency due to increasing financial uncertainties and the ever-growing list of environmental issues.

and Landscape (BUWAL) and the University of Geneva on the continued operation of UNEP GRID-Geneva. This strategic partnership highlights the ability of GRID-Geneva to forge pragmatic institutional arrangements and strengthen its capacity to meet the challenge of monitoring the state of our planet's complex environment.

I would like to commend GRID-Geneva on its ability to deliver reliable and timely information to decision-makers and the public, especially on the many forest and wild-land fires that struck many parts of the globe in 1998, but also on other environmental disasters and issues. The utility that UNEP derives from the array of

information products provided by the GRID system is worthy of note and should be emphasised.

It is my intent that GRID-Geneva should develop a reputation for excellence in support of the UNEP environmental information, assessment and early warning function. This intention is well served by the newly forged strategic partnership. I sincerely thank the Swiss Government for its generosity in spirit and resources and I also commend the staff of the UNEP GRID-Geneva secretariat for their vigour and the provision of their cutting-edge services.



**Klaus Töpfer**  
Under-Secretary General of the United Nations  
and Executive Director of UNEP

# Greetings from BUWAL's Director

Over the years, the Swiss Government has developed a strong commitment to catalysing international action on issues of global significance. Protecting the world's environment through sustainable development planning has been a galvanizing issue worldwide, culminating with the adoption of Agenda 21 in 1992. The Swiss Government regards a strengthened UNEP, the so-called "environmental conscience" of the United Nations system, to be at the forefront of this effort and recognizes the important role it plays in assessing and providing early warning on the state of our planet.

An important part of the Swiss Government's support to UNEP has been made through our contribution to GRID-

"I envision a strong GRID-Geneva playing an important catalysing function for international collaboration and joint action on emerging threats of regional and global environmental degradation."

Geneva. 1998 marked a new phase in Switzerland's relationship with GRID-Geneva, with the signing of the "Partnership Agreement" between UNEP, the Swiss Federal Agency for Environment, Forests and Landscape (BUWAL) and the University of Geneva. This innovative partnership brings together institutions working at different levels in a strategic network and allows for improved integration of international, national and local activities on environmental information management.

I would like to take this opportunity to congratulate GRID-Geneva's Regional Coordinator and the staff, as well as its Advisory Board on their commendable work and the high quality and timeliness of their many products. It is always reassuring to know that countries can call on GRID's expertise in information technologies to help them make well-informed decisions about our environment. I envision a strong GRID-Geneva playing an important catalysing function for international collaboration and joint action on emerging threats of regional and global environmental degradation.

I would also like to assure GRID-Geneva of my confidence that cooperation between UNEP and the Government of Switzerland



**Philippe Roch**  
Director of the Swiss Federal Agency for  
Environment, Forests and Landscape (BUWAL)

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## About GRID-Geneva

**G**RID-Geneva is part of the worldwide GRID network set up by UNEP. Established in mid-1985, GRID-Geneva is administered by UNEP's programme for Environmental Information, Assessment and Early Warning (DEIA&EW) from its headquarters in Nairobi, Kenya. Support from Swiss partner institutions has been a key component of GRID-Geneva's make-up since its establishment, and in June 1998 this relationship was reinforced with the signing of a "Partnership Agreement" between UNEP, the Swiss Federal Agency for Environment, Forests and Landscape (BUWAL) and the University of Geneva.

### Focus of Work

The focus of GRID-Geneva's work is on geographic data, or spatial environmental data that are cartographically displayed, and the transformation of raw data into usable information as well as synthesizing and adding value to existing products. It maintains a vast archive of global, European and other geo-spatial databases as part of its information management function. GRID-Geneva specialises in the preparation and provision of value-added environmental information products such as thematic maps, interprets data for decision-making using analytical tools such as Geographic Information Systems (GIS) and remote sensing, and designs client-specific databases and Internet websites. GRID-Geneva also serves an important coordinating role for regional activities undertaken by its seven European GRID centre partners. The office also works to develop and strengthen environmental information management capacities within governmental and regional organisations and the United Nations system.

### Location

GRID-Geneva is located at the Geneva Executive Centre (GEC) in Geneva's Châtelaine suburb, a few minutes drive from the city-center and the main UN offices at the Palais des Nations. Several other UNEP programmes are also housed at the GEC including UNEP's Regional Office for Europe (ROE), System-wide Earthwatch, the Chemicals Programme as well as the secretariats of several global Environmental Conventions such as CITES and the Basel Convention.



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Geneva Executive Centre

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## Year in Review

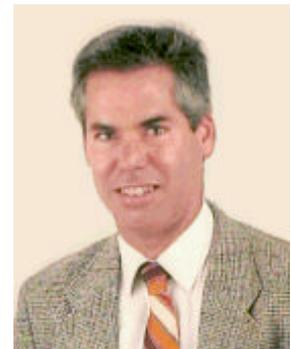
**T**here can be little doubt that 1998 was an exceptional year for GRID-Geneva. To begin with, the year saw the re-founding of the office through a new institutional configuration known as the "GRID-Geneva Partnership", after the tripartite, multi-year agreement formally concluded in June between UNEP, the Swiss Federal Agency for Environment, Forests and Landscape (BUWAL) and the University of Geneva. Unique among GRID centre agreements in that it unites an international, a national and a cantonal institution in support of a UNEP centre, the Partnership guarantees multi-agency support for GRID-Geneva through 2001.

Secondly, following the definition of new agency priorities by UNEP's incoming Executive Director Klaus Töpfer, GRID-Geneva was able to demonstrate its new-found operational flexibility by responding to one of 1998's worst environmental happenings, the global forest and wildfires' disaster, with a series of data and information products for decision-makers widely used and admired both inside and outside of the organisation. Thus GRID-Geneva helped to lead the way in re-orienting the activities of the GRID network toward topical events and direct provision of relevant and timely information for decision-makers.

Thirdly, the office was able to embark on its first major expansion of project activities in many years, with the additional resources provided by the Partners for new staff hires and equipment. These new activities included a suite of information products for "early-warning" purposes; development of a state-of-the-art website on biodiversity for the Clearing House Mechanism (CHM) required under Swiss adherence to the Biological Diversity Convention; the

planning and hosting of the first formal European-wide GRID centres' meeting; and an effort to re-initiate the GRID-wide electronic data catalog or "Meta-data Directory (Mdd)".

Collectively, these events and activities demonstrate that the re-vitalised GRID-Geneva Partnership office is not only capable of responding to UNEP's foremost priorities in environmental data and information provision, but also in many senses leading the way towards a new definition of the GRID network and its role of supplying "information for decision-makers" and the general public on the



**Ron Witt**  
Regional Co-ordinator  
DEIA&EW/GRID-Geneva

# Partnership Agreement Bolsters GRID-Geneva's Role

The signing on 15 June 1998 of the GRID-Geneva "Partnership Agreement" between UNEP, BUWAL and the University of Geneva marked a major threshold in the history of GRID-Geneva. A ceremony celebrating the event was held at the Geneva Executive Centre (GEC) and included the participation of UNEP's Executive Director, Dr. K. Töpfer, BUWAL's Director, Mr. P. Roch and the Rector of the University of Geneva, Dr. B. Fulpius and ROE's Mr. F. Schlingemann, UNEP's Regional Director. Swiss government officials, heads of UNEP units and global conventions, and other UN staff based at GEC also participated in the ceremony. The signing was followed by a joint press conference of Mr. Roch and Dr. Töpfer at the Palais des Nations, in which they expressed their belief that the partnership would help GRID-Geneva become more effective and efficient in delivering high-quality and timely products which the global community is expecting from UNEP.

The "Partnership Agreement" is an innovative arrangement that aims to integrate organisations operating at several scales: UNEP at the international level, a national environmental government agency represented by BUWAL, and a locally-based academic institution. By consolidating the competitive advantage of the three institutions, this tripartite set-up substantially reinforces the role of GRID-Geneva as a centre of excellence in environmental data analysis and information technologies, and strengthens its abilities to provide early warning on emerging environmental issues. BUWAL stands to gain from GRID's international network of partners and by having direct recourse to its expertise in environmental data management and related information

technology. The participation of the University of Geneva not only enriches the partnership with scientific expertise, but is also helping to promote greater familiarization and participation by University staff and students in the day-to-day life of UNEP, and closer links with local



Left to right: Frits Schlingemann, Ron Witt, Klaus Töpfer, Bernard Fupius and Philippe Roch (seated).

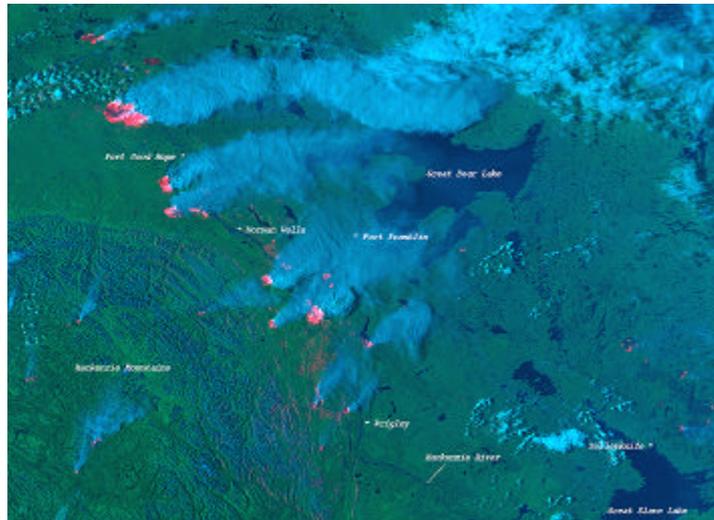
## First Advisory Board Meeting

In October 1998, the first meeting of the GRID-Geneva Partnership Advisory Board was held, attended by representatives from each of the Partner institutions, to lay out a road map for GRID-Geneva's medium-term future and better integrate it within UNEP's new "Observing and Assessment Strategy". In this emerging scheme, the GRID network has a significant role to play in data integration and analysis, and is expected to contribute to global and sectoral environmental assessments by preparing a variety of information products. An emerging issue from the discussions was the growing need to develop a contingency plan enabling GRID-Geneva to respond to emergency situations on an ad-hoc basis. Also finalised at the meeting were the terms-of-reference and operational procedures of the Advisory Board.

# "Forewarned is Fore-armed": Monitoring Wildfires Worldwide

One of the major activities carried-out by GRID-Geneva in 1998 was monitoring and reporting on the large-scale wildfires that struck many parts of the

world. In many areas, small-scale, human-initiated land clearing fires rapidly developed into uncontrolled and widespread fires as a result of the extreme drought conditions apparently related to the 1997 El Nino. The tropical forests of Southeast Asia and Amazonia were the hardest hit by these fires, but other areas including South and Central



Timely remote sensing analysis of satellite imagery by GRID-Geneva kept decision-makers informed of the wildfire situation worldwide. The above image from August 5th 1998 of the Great Bear Lake area in Canada shows numerous heat signatures in red while the large smoke plumes appear as blue clouds.

fires location (e.g. park and, national boundaries, etc.) to better visualise and assess the impact of their extent. Area-specific information packages were prepared on request for the UNEP-OCHA (Office for the Coordination of Humanitarian Affairs) Environment Unit and other UN agencies.

America, Russia, China and Canada were also seriously affected.

GRID-Geneva initiated the preparation of status reports monitoring the progress of the wildfires on a weekly basis. These reports were prepared to better inform decision-makers within UNEP and other UN agencies about the environmental and health risks of the fires, and to assist them in formulating appropriate and practical policy responses. Monitoring work was largely based on the interpretation of remotely-sensed satellite imagery, derived maps and other information collected from Internet websites. Images and maps so obtained were then enhanced and annotated by GRID-Geneva staff and

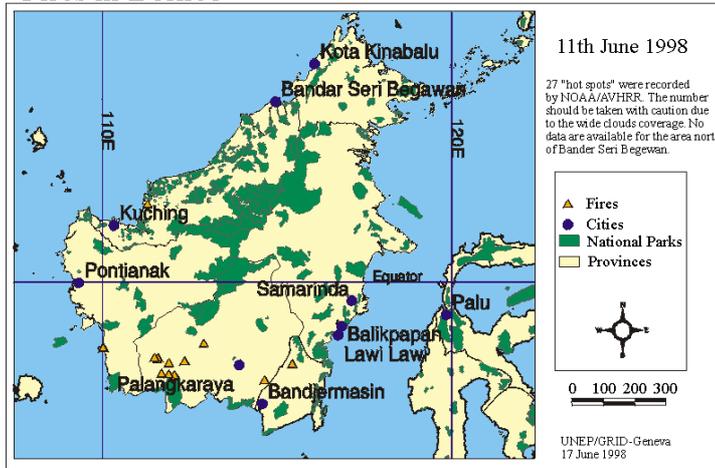
This included reporting on the fire situation in the Khabarovsk region and Sakhalin peninsula of the Russian Federation, and evaluating the impact of fire evolution on human infrastructure and environmental features (e.g. national parks) in Central America and Southeast Asia.

GRID-Geneva also developed and updated several large-format posters illustrating the forest fire situation in Southeast Asia, Indonesia and Kalimantan (Indonesian Borneo). These posters were displayed at a number of venues including the International Forestry Forum held in Geneva in August 1998, meetings of the Association of South East Asian Nations (ASEAN) and Advisory Coordinating

Committee (ACC), and related international environmental conferences. In order to provide decision-makers and interested parties with timely information on the wildfires evolution, a website was developed providing on-line access to reports, maps and images that were updated on a weekly basis.

When fire activity diminished in late 1998, the focus of GRID-Geneva's work shifted to understanding the factors triggering their outbreak. As part of this endeavour, a technical report entitled "Wildland Fires and the Environment: A Global Synthesis" was prepared in collaboration between GRID-Geneva, USGS/GRID-Sioux Falls, NASA and the USDA/Forest Service. Issued as part of the "Environmental Information and Assessment Technical Reports" series complementing the final Global Environment Outlook-2 Report (GEO-2), the Wildland Fires report provides an overview of their causes and impacts, and identifies some potential means that the international community could adopt to respond to widespread forest and wild fires. Specific attention is given to the Indonesian fires of 1997-98, since they resulted in exceptional damage and raised public awareness world-wide about the impacts of fires on global climate.

### Fires in Borneo



Maps and posters, derived from satellite image analysis, showing areas that were hardest hit by wildfire outbreaks, were regularly produced and updated by GRID-Geneva.



The GRID-Geneva Global Wildfire Website

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## Cooperation with the European Environment Agency

**F**ormal cooperation between UNEP and the European Environment Agency (EEA) dates back to early 1996 when, shortly after the latter was first established, UNEP's Regional Office for Europe (ROE) and GRID held a series of discussions with EEA management and staff to establish a working relationship. The ensuing discussions resulted in the signing of a formal Memorandum of Understanding (MoU) between the two agencies in October 1997, on the basis of which a number of collaborative activities have since been developed.

Much of the relationship has focussed on harmonising the two agencies' approaches to capacity building for environmental data and information management, network development and State-of-Environment (SoE) reporting in the CIS, Central and Eastern European countries. This is largely being achieved through regular collaboration between the EEA's European Environmental Information and Observation Network (EIONET) and UNEP's Environment and Natural Resources Information Networking (ENRIN) programmes. At the same time, one of the more visible outputs of the overall EEA-UNEP interaction has been a series of "annual messages", which have been issued jointly by the EEA and UNEP on a European environment-related priority topic.

The purpose of each annual message is to raise awareness, spur interest and ultimately action among decision-makers and the general public on an issue which is at or near the top of the European environmental agenda. Each report is fairly brief (15-20 pages) and accompanied by attractive, eye-catching graphics and photos, while the accompanying text treats the subject in a scientific but

understandable fashion for a wide range of readers. In 1997, the topic of the first annual message was "Water Stress in Europe - can the challenge be met?", while in 1998 the topic addressed was "Chemicals in the European Environment: low doses, high stakes?".

The role of GRID-Geneva in these reports was to coordinate their preparation from UNEP's side, assuring that proper inputs were provided by the relevant UNEP units (e.g., Chemicals Unit in the case of 1998's message) and that UNEP's inputs including graphics were harmonised in the final product with those of the EEA. Significant editing and re-writing of the texts has also been provided by GRID-Geneva staff.

The "annual messages" have proven highly popular with their intended audience and certainly represent a good example of UNEP's and GRID-Geneva's ventures into the realm of "information for decision-makers" and the general public. The subject for the 1999 annual message which is on European Soils should also prove popular, and allow for the illustration (through use of the "pressure-state-impact-response" or PSIR model) of different practices, conditions, problems and needed policy responses to deal with the situation of soils across Europe today.

# Use of GIS for Conflict Prevention and Resolution

**M**ounting concern over the availability of freshwater resources has emerged as one of the high-priority environmental challenges marking the end of the 20th century. Large segments of developing country populations already suffer from serious water shortages, and

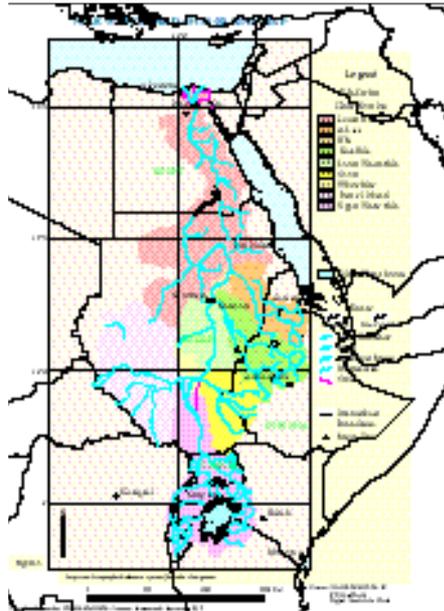
the problem is most acute in those regions of the world experiencing water deficits due to inadequate rainfall, overexploited surface waters and dropping water tables. Equitable utilisation of trans-boundary water resources has typically been a contentious issue amongst riparian states. Such is the case with the Nile River, where water demand has steadily risen in the region due to population growth and related agricultural and industrial development, as well as recreational services, factors that significantly contribute to increased per capita use of freshwater.

It is within this context of

national concern over water-related conflicts that GRID-Geneva initiated a project activity on the "Use of GIS for Environmental Conflict Prevention and Resolution", comprising a series of sub-projects. The project's overall aim is to provide an objective means of dealing with potential freshwater-related environmental problems between states and societal interest groups. The first of the sub-projects on the Nile Basin focused on the development of an experimental methodology for identifying the potential water-related problems in a given watershed, and relied on distributed

hydrological and socio-economic modelling using a Geographic Information System (GIS).

The first stage of the project consisted of compiling available georeferenced data sets of the Nile Valley region (climate, vegetation



Sustainable management of River Nile waters requires that responsible authorities in the 10 riparian countries have access to reliable information.

solar radiation, soil properties, precipitation, etc.) and socio-economic factors (population, agriculture, industries, land use, etc.), for input into a GIS modelling tool for water balance analysis. The georeferenced data sets were subsequently stored in ArcInfo/ArcView to serve as inputs for future water balance modelling and to develop scenarios exploring the impact of climate change and population growth on watershed resources that may give rise to water disputes. A series of physical and socio-economic baseline maps of the entire Nile basin were

elaborated providing an introduction to the Nile River Basin project, preliminary to reviewing the water requirements of riparian states and identifying potential "hot spots" requiring further study.

The application of information technology tools such as GIS and use of Internet-based communication platforms for environmental conflict prevention and resolution in the Nile Valley case study has proven to be a very promising approach, and one which GRID-Geneva is eagerly pursuing in collaboration with partner institutions.

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## Establishment of the SCEP/GRID-Moscow Centre

**T**he Russian Federation has one of the largest contiguous land areas of all countries in the world, and with this vast territory a multitude of environmental problems, often on a large scale, need to be examined and treated. For this reason alone, the development of a Russian GRID centre would seem to be in order, and indeed such was part of the thinking behind GRID-Moscow's establishment in 1998.

The official Memorandum of Understanding establishing GRID-Moscow had already been signed at UNEP's Governing Council 19 in February 1997 by UNEP's Assistant Executive Director for Environmental Information and Assessment (DEIA), and the First Deputy Chairman of the State Committee for Environmental Protection (SCEP) of the Russian Federation. This document had been prepared by the principals of both institutions, UNEP/DEIA's Regional Coordinator for Europe and SCEP's Scientific Affairs Advisor.

GRID-Moscow had been set up within SCEP and exists formally as a "state enterprise" or mixed-mode (that is, a public/private) operation. In order to prepare the ground for the implementation of GRID-Moscow, DEIA/GRID-Geneva's Regional Coordinator visited and held a series of discussions with the relevant staff of SCEP beginning in March 1997. In the first phase, an evaluation of necessary resources (human and financial) was conducted, both through direct meetings and discussions with the parties involved, and liaison visits with other concerned Russian bodies and state entities which would have to interact with the GRID-Moscow centre (such as the Centre for International Projects CIP and the Hydrometeorological Ministry). A budget and two-year workplan were drawn up and the appropriate resources identified through

collaboration with SCEP that was also responsible for preparing the official documents supporting the legal establishment of the GRID-Moscow office. Further visits were held with the managerial staff of GRID-Moscow-to-be in Geneva, in order to familiarise them with UNEP and GRID operating procedures, and thus ease their way into the GRID network and UNEP administration.

The GRID-Moscow agreement was initially established for a two-year funding period, and it is planned that in 1999 a new arrangement will be initiated to continue governmental and private support for the centre. GRID-Geneva continues to work with and oversee development of the centre's activities and workplan, in accordance with UNEP and DEIA&EW new priorities and programme of work.

Already the first studies conducted by GRID-Moscow staff were made available to UNEP and the GRID network of centres in early 1998. Among the centre's outputs is a full website which can be consulted at "[gridmsk.infospace.ru](http://gridmsk.infospace.ru)". Although it was not possible to officially "open" the GRID-Moscow centre during the World Environment Day ceremonies held in Moscow in June 1998 due to re-structuring within the Russian government, the centre continued to produce valuable data and information products for Russian and international decision makers and the general public throughout 1998.

## "Euro-GRID '98" Meeting

The first formal meeting of the European GRID Centres took place on 18-19 November 1998, and was organised and hosted by GRID-Geneva at the Geneva Executive Centre. It was attended by the seven European GRID centre directors or their senior representatives; namely from GRIDs Arendal, Budapest, Geneva, MAP's Blue Plan, Moscow, Tbilisi and Warsaw. Also present was Mr. Bob Kakuyo, officer-in-charge of DEIA&EW's Environmental Information Networking (EIN) component, who provided a Headquarters' perspective for the meeting.

Much of the discussion focused on elaborating a common European-GRID strategy and aligning it more closely with UNEP's new "assessment and early warning" roles. Some of the specific issues deliberated upon included:

- developing a set of criteria on the roles and responsibilities of a GRID centre;
- providing general guidelines on how to participate in the Euro-GRID network;
- considering follow-up activities to strengthen networking between European GRID centres; and
- developing a common project that would actively involve all GRID centres and thereby help build stronger partnerships. Potential areas highlighted in this regard were fresh water "hot spots" in Europe, and the localisation and monitoring of nuclear waste and other hazardous materials.

The meeting also led to the adoption of joint activities aiming to promote regional cooperation. These included the preparation of a regional Euro-GRID newsletter both in electronic and hardcopy formats, investigating possibilities for staff

exchanges between GRID centres, and sharing experiences on "green office" practices.

Euro-GRID 1998 provided a valuable platform for GRID centres to exchange information about their priorities and strategies for the future, and to streamline their approach into the new millennium, particularly in light of the limited resources available from UNEP headquarters. Participants expressed their belief that this meeting should help stimulate further co-operation among the European GRID centres. The next Euro-GRID meeting will be hosted by GRID-Budapest in Hungary in September 1999.



Left to right: Z. Jintcharadze (Tbilisi), R. Witt (Geneva), N. Denisov (Arendal), E. Lobanov (Moscow), B. Kakuyo (DEIA&EW), M. Baranowski (Warsaw).  
Missing from photo: P. Bozo (Budapest), K. Folgen (Arendal), V. Gavrilov (Moscow), J-P. Giraud (MAP/Blue Plan)

GRID-Geneva

# Meta-Database Activities

As part of its overall strategic drive to facilitate greater access to data held by various international and national organisations, and to improve sustainable development decision-making, GRID-Geneva embarked on a number of meta-database support initiatives in 1998. These included:

## Updating the GRID Meta-data Directory (MdD) for Improved Information Dissemination

The GRID Meta-data Directory (MdD) is an electronic catalogue of environmental data sets and institutions. It is a basic information management tool that allows all GRID Centres to know "who holds what data and information assets, and where". With support from NASA's Goddard Space Flight Centre (GSFC), GRID-Geneva updated the GRID MdD in late 1998, and subsequently distributed to the 15 GRID Centres on CD-ROM. Later in 1999, harmonised and verified meta-data collected from the 15 GRID Centers will be input to NASA's Global Change Master Directory (GCMD) for the benefit of a wider community of users.

## Catalogue of Data Sources for Switzerland

As part of Switzerland's ongoing efforts to

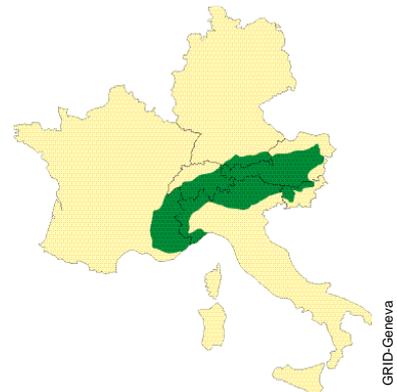


The Swiss Catalogue of Data Sources

harmonise national environmental practices and standards with those of neighbouring European Union countries, GRID-Geneva was called upon by BUWAL to provide technical and logistical support in developing a Swiss version of the European Environment Agency's Catalogue of Data Sources (CDS). At the local level, GRID-Geneva was also contracted by the Canton of Geneva's Department of Interior, Agriculture, Environment and Energy (DIAEE) to prepare a pilot cantonal CDS linked to the national CDS.

## Catalogue of Data Sources for the Alpine Region

Work has been initiated to collect meta-data of international and Swiss data sources for the Alpine-CDS hosted by the European



Member Countries of Alpine Convention shaded in green.

Joint Research Centre (JRC) in Ispra, Italy. The objective of the Alpine-CDS is to facilitate access to information on the Alps by providing meta-information on existing data sets. This project is continuing into 1999, and includes developing indicators on climate change for the Alpine Convention.

## An Internet Site on Switzerland's Biodiversity Activities

The Convention on Biological Diversity (1992) calls on contracting countries to develop national Clearing House Mechanisms (CHM) that would help facilitate access to and exchange of information on biodiversity issues from around the world. Recognising that the Internet provides an ideal medium for information sharing, the Swiss Federal Agency for the Environment, Forests and Landscape (BUWAL) commissioned GRID-Geneva to develop an Internet site in accordance with the objectives of the CHM.

A preliminary version of the Swiss CHM website was demonstrated for participants at the Biodiversity Convention's

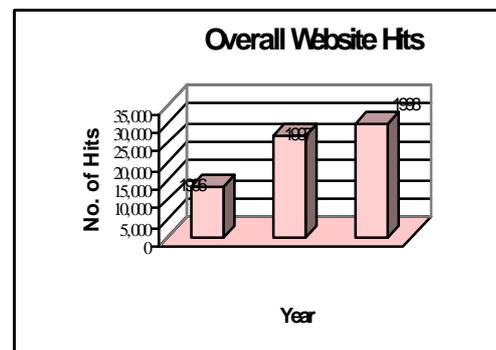


Conference of the Parties held in Bratislava, Slovakia in early May 1998. The final version of the website was handed over to BUWAL, which launched it in late 1998. The site is available in the three official languages of Switzerland: German, French and Italian, as well as in English.

The website provides a wealth of information on Switzerland's efforts to conserve its biodiversity. It is structured around five main thematic areas: an overview of Switzerland's environment; the Swiss National Report on biodiversity; academic and scientific research institutes; a searchable database on Swiss information sources; and international activities relating to biodiversity. The website also offers practical examples of how Switzerland intends to manage and monitor its biodiversity.

## GRID-Geneva Website

An upgraded version of the GRID-Geneva web site was launched in mid-1998. The new layout design offers a more user-friendly interface with improved navigation tools facilitating easier access to GRID-Geneva information products. The homepage itself was completely redesigned and many subsidiary pages providing access to data sets, maps, project information and other topics were either updated or newly developed. The on-line data access system has also been significantly simplified, allowing users to bypass a cumbersome "verification process" before gaining access to global, European and other data sets held by GRID-Geneva.

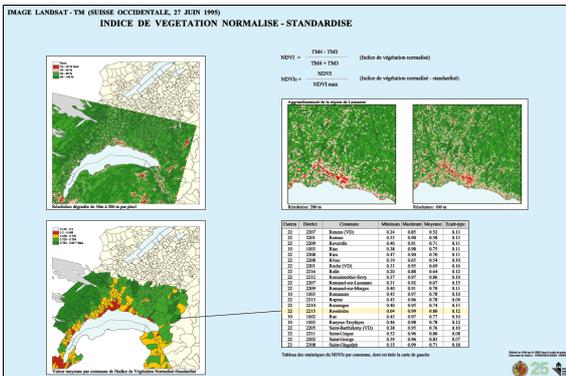


Newly developed sub-sites added to the GRID-Geneva website include a "Forest/Wild Fires Monitoring" section updated on a weekly basis, and the "Use of GIS for Conflict Prevention/Resolution" project exploring a series of case studies. Several jointly developed websites with partner organisations have been created such as the "Human Population Database for the Russian Federation (GRID-Geneva/CNRS)" and the "Asia Population Database Documentation (GRID-Geneva/NCGIA)". GRID-Geneva also hosts a mirror site to the frequently visited Global Environment Outlook Report (GEO) Report.

# Cartographic and Poster Products

## Land cover maps of Vaud Canton, Switzerland

GRID-Geneva was responsible for preparing a set of 25 land cover maps of Vaud Canton in Switzerland for the University of Geneva. The maps were based on a Landsat Thematic Mapper (TM) image for the evaluation of vegetation and on GEOSTAT, a georeferenced data set of the Swiss Federal Statistical Office. These maps have been used as background information for developing recommendations on land planning in the region.



GRID-Geneva

## Franco-Swiss land cover-mapping project

GRID-Geneva carried out a mapping project of a small river basin overlapping the Canton of Geneva and the French department of Haute-Savoie. The principle objective of this work was to develop a practical methodology for harmonising land cover classifications between western Switzerland (the "Romandie" region) and neighbouring areas in France.

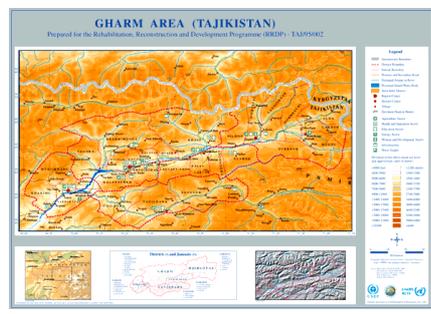
## UNEP in the European Region



GRID-Geneva

In September 1998, GRID-Geneva prepared a new political map of "UNEP in the European Region" for use by the Regional Office for Europe (ROE). The map has also been made available to other UNEP units active in the region. Also created was a topographical map entitled "The European Region of UNEP – Physical Features and Surrounding Lands", which includes all of Eurasia.

## Karategin (Garm) Valley, Tajikistan



GRID-Geneva

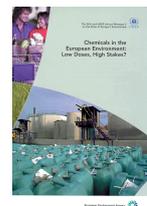
On the request of the United Nations Office for Project Services (UNOPS) in Geneva, GRID-Geneva prepared a map of the Karategin (Garm) Valley in Tajikistan as part of a pilot project on database development and mapping at the regional scale for development projects within that country.

## Selected Publications

Levine, J., Bobbe, T., Ray, N., Witt, R. and Singh, A. *Wildland Fires and the Environment: a Global Synthesis*. UNEP Environmental Information and Assessment Series. UNEP/GRID-Geneva/GRID-Sioux Falls, NASA, USDA/FS, USGS, 1998.



*Chemicals in the European Environment ~ low doses/high stakes?* EEA and UNEP/Chemicals/GRID-Geneva, 1998.

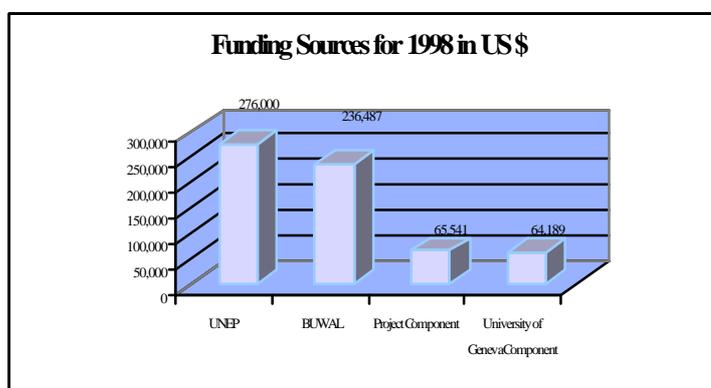


*Report of the First European GRID Centres Meeting ~ "Euro-GRID '98"*. GRID-Geneva, 1998.

Booth, J. and Jaquet, J-M. *Potential Fresh Water-related International Environmental Conflicts: a case study in the Nile River Basin*. GRID-Geneva, 1998.

## GRID Geneva Budget Expenditure 1998

<b>Operational Costs</b>	<b>US \$</b>
Personnel	523,244
Infrastructure (hardware/software/networks)	33,378
Miscellaneous (communications/travel/other)	48,716
Overhead Charges	20,270
 <b>Balance Sheet</b>	 
Total Payments	642,217
Total Disbursements	625,608
Net Financial Status (as of 01/01/99)	16,609



# Who's Who at GRID Geneva

## 1998 GRID-Geneva Staff

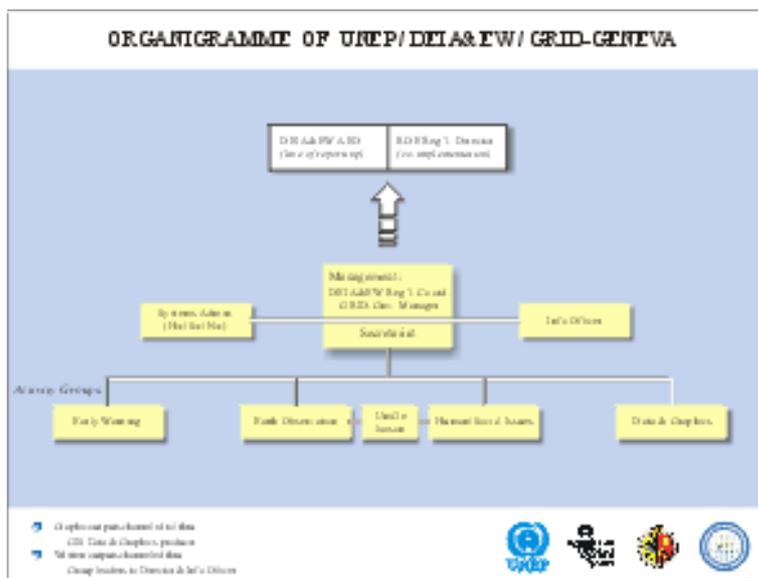
*Hy Dao*, GIS Analyst and Meta-databases Coordinator  
*Dominique Del Peitro*, GIS Specialist and Graphics Designer  
*Linda Duquesnoy*, Administrative Assistant and Secretary  
*Frédéric Jacot-Guillarmod*, Consultant for the GRID meta-database  
*Jean-Michel Jaquet*, Senior Researcher on Water-related Issues  
*Pascal Peduzzi*, Consultant, Forest and Wildfire related activities  
*Nicolas Ray*, Consultant, Forest/Wildfires technical report  
*Frédéric Vogel*, Consultant for Geneva Canton CDS  
*Ron Witt*, Manager and DEIA&EW Regional Coordinator  
*B. Zand*, Systems and Network Administrator

## 1998 Visiting Trainees

*Karine Bachman*, Certificate of Geomatics, University of Geneva, Switzerland  
*Jonathan Booth*, Geography Student, University of Geneva, Switzerland (June-August 1998)  
*Pascal Lavorel*, Certificate of Geomatics, University of Geneva, Switzerland  
*Stefan Schwarzer*, Geology Student, University of Trier, Germany (July-August 1998)

## Organisational set-up of GRID Geneva

**G**RID-Geneva underwent internal restructuring in 1998 to enable it to better fulfill the expanded role of GRID and effectively address the new priorities set by UNEP and DEIA&EW, particularly in terms of strengthening the "early warning" programme. New staff have also been recruited to implement planned activities. The diagram to the right illustrates the proposed revised structure of GRID-Geneva, implemented early in 1999.



# Members of the GRID – Geneva Advisory Board

Mr. Arthur Lyon Dahl, Deputy Director and Coordinator, UN System-wide Earthwatch, UNEP/DEIA&EW

Ms. Monika Linn Locher, Head, Global Affairs Section, International Affairs Division, BUWAL

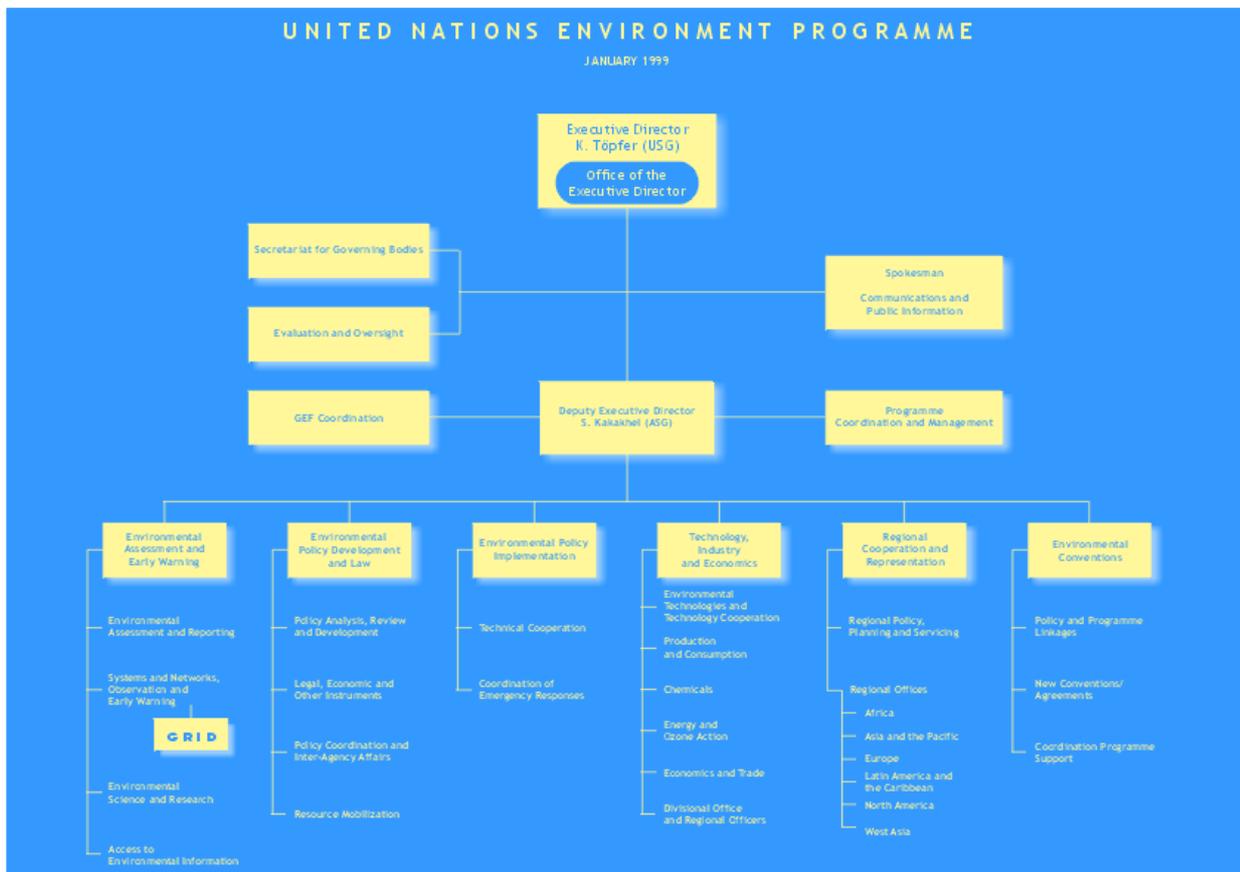
Mr. Andràs November, Professor University of Geneva/IUED

Mr. Nicholas Perritaz, Head of Section, Research and Monitoring of the Environment, BUWAL  
(replaced Mr. Peter Grolimund 3/99)

Mr. Frits Schlingemann, Director and Regional Representative, UNEP Regional Office for Europe

Mr. Walter Wildi, Director, University of Geneva/Institut Forel

## UNEP Organigramme showing placement of GRID



Adapted from UNEP Annual Report 1998

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## Acronyms

**ASEAN** - Association of South East Asian Nations  
**ACC** - Advisory Co-ordinating Committee (of UN)  
**BUWAL** - Swiss Federal Agency for Environment, Forests and Landscape  
**CD-ROM** - Compact Disc - Read Only Memory  
**CDS** - Catalogue of Data Sources  
**CHM** - Clearing House Mechanism  
**DEIA&EW** - Division of Environmental Information, Assessment and Early Warning  
**DIAEE** – Department of Interior, Agriculture, Environment and Energy  
**EEA** - European Environment Agency  
**EIN** - Environmental Information Networking  
**GCMD** - Global Change Master Directory (of NASA)  
**GEC** - Geneva Executive Centre  
**GEO** - Global Environmental Outlook  
**GIS** - Geographic Information System  
**GRID** - Global Resource Information Database  
**GSFC** - Goddard Space Flight Centre  
**JRC** - Joint Research Centre (of EU)  
**MdD** - Meta-data Directory (of UNEP/GRID)  
**NASA** - National Aeronautics and Space Administration (U.S.A.)  
**OCHA** - Office for the Coordination of Humanitarian Affairs (U.N.)  
**ROE** - Regional Office for Europe (UNEP)  
**SoE** - State of the Environment  
**UN** - United Nations  
**UNEP** - United Nations Environment Programme  
**UNOPS** - United Nations Office for Project Services  
**USDA/FS** - United States Department of Agriculture/Forest Service  
**USGS** - United States Geological Survey  
**WWW** - World Wide Web

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# The UNEP/GRID Network

To learn more about GRID activities in your region, please contact the Coordinator of GRID or the GRID Centre(s) nearest to you:

DEIA&EW/GRID Coordination  
Dan van Claasen, Chief  
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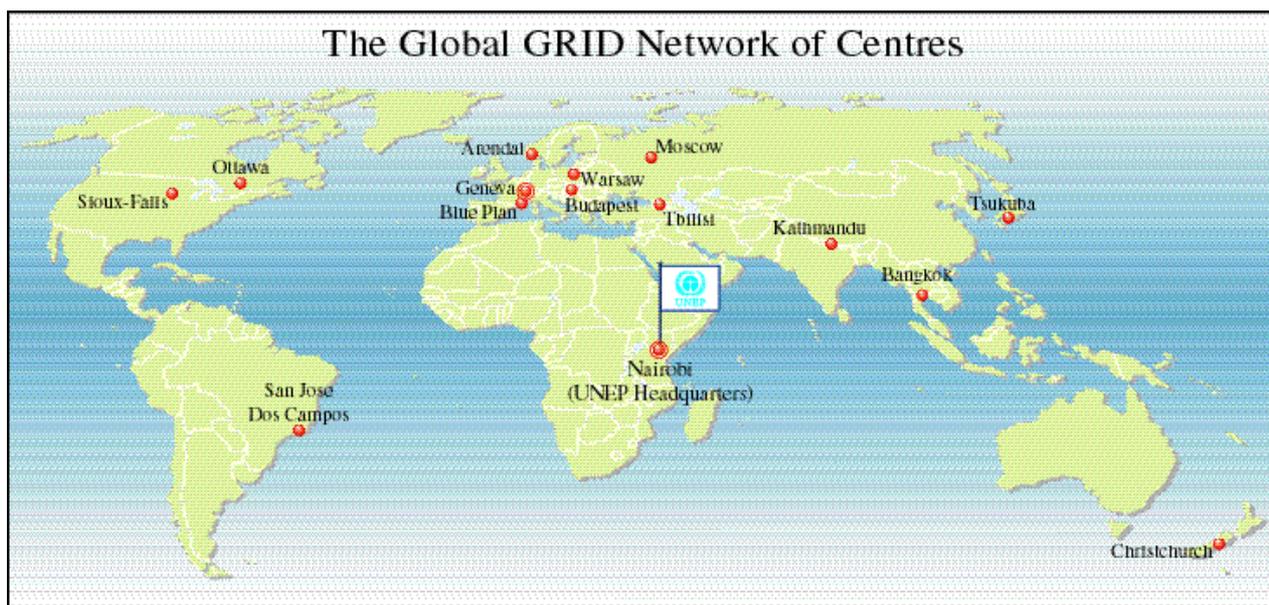
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## The Global GRID Network of Centres



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