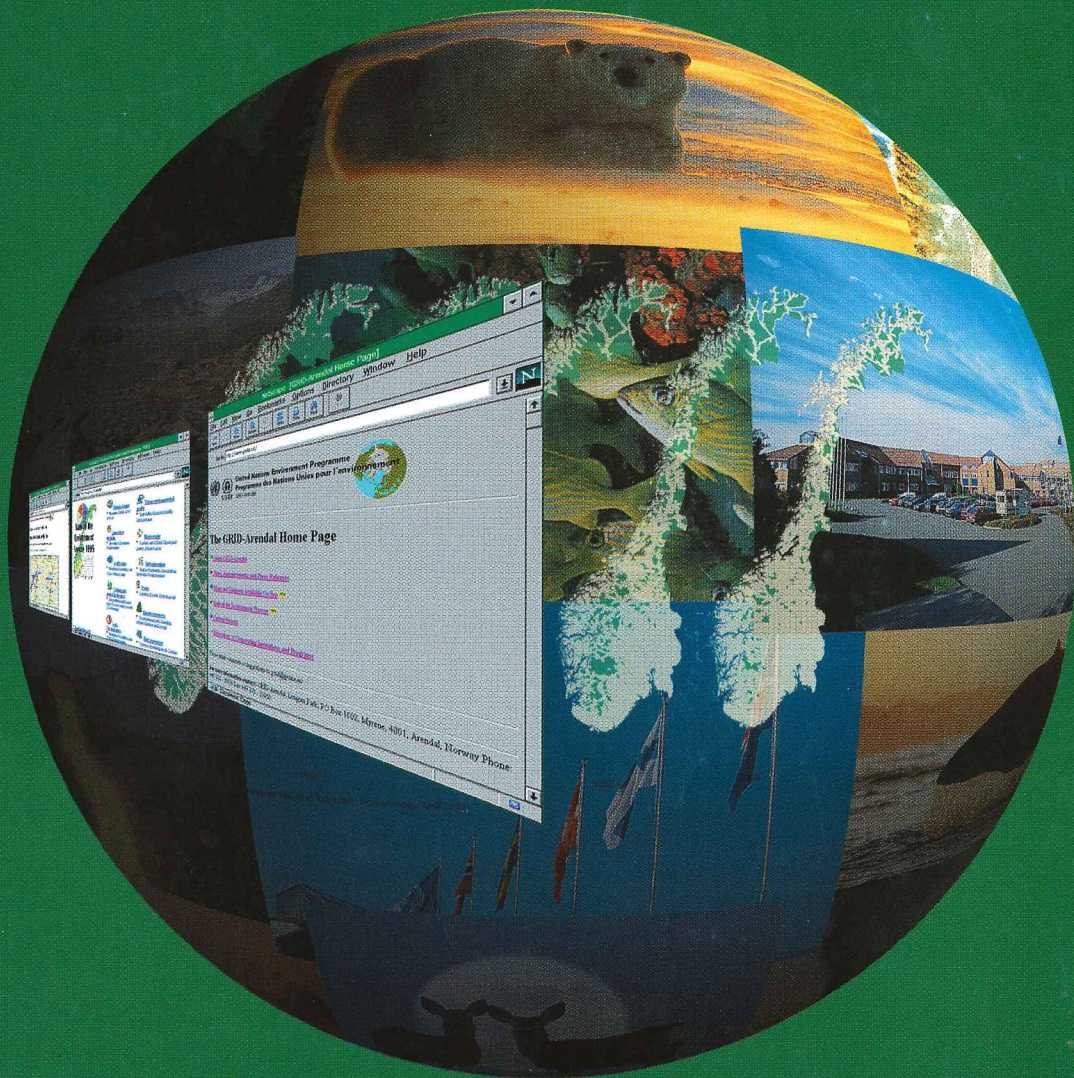


GRID

Arendal

Annual Report 1995



GRID
Arendal



UNEP

Elizabeth Dowdeswell, Executive Director, UNEP

UNEP is very satisfied with our arrangement with the Government of Norway — the Ministry of Environment in particular — for the dynamic and productive cooperation through GRID-Arendal. UNEP is proud to «have its mark» on the outputs and results GRID-Arendal is achieving in the area of information for decision-making and institutional capacity-building. We appreciate GRID-Arendal's expanding operational role, not only for its important and successful programmatic contribution, but also as a model for how UNEP and governments can better work together to implement our common Environment Programme.

Norway, through GRID-Arendal, is making the State of the Norwegian Environment available to an increasing international audience over the «electronic highways» of the Internet. This, too, should serve as an excellent example of making environmental information more readily available for sound policy setting and increased public awareness for our common goals and «for life on earth».



Elizabeth Dowdeswell, Executive Director, UNEP



Elizabeth Dowdeswell

UNEP

The United Nations Environment Programme (UNEP) was created by the United Nations (UN) General Assembly following the Conference on Environment and Development which took place in Stockholm in 1972.

Since then, a central task of UNEP during the past 23 years has been to supply accurate and reliable environmental information as a basis for comprehensive assessments of environmental issues. UNEP's Division of Environment Information and Assessment (DEIA) has made significant contributions to **Earthwatch**, a coordinating mechanism through which UN bodies, in collaboration with governments and scientists, gather environmental data and information.

International environmental agreements, developed by UNEP in the form of conventions and protocols, contribute significantly to shaping national environmental policies and international response.

Continuously at the forefront to meet current environmental information needs, UNEP's DEIA aims to provide the world community with improved access to meaningful environmental data and information, and to help increase the capacity of governments to use environmental information for decision-making and action-planning for sustainable human development.

An integral part of this Division is the Global Resource Information Database (GRID), a global network of cooperating centers providing access to environmental information for decision- and policy-making processes. GRID also provides data distribution, data cataloguing, archiving and analytical services, using GIS, remote sensing, database and telecommunication technologies. The users of this information are other UN organizations, national governments, scientific and environmental institutions, universities, schools and the general public.

Front page photographs: Earth Audit © UNEP, 1992, Per Lunden
Printed on environmentally friendly paper, 50 % recycled Bø Trykk AS, Norway

The Year in Review

During 1995 UNEP/GRID-Arendal pioneered an innovation within UNEP. In cooperation with the Norwegian Ministry of the Environment, UNEP/GRID-Arendal produced the Internet version of the 1995 State of the Environment Report for Norway. This multi-media national report was the first of its kind and was released in July 1995 by Norway's Minister of the Environment, Thorbjørn Berntsen.

We were particularly encouraged by UNEP's endorsement of this reporting concept as a reference point for the production and dissemination of similar reports by other countries.

We have continued to focus major attention on the polar areas. The priority in 1995 has been data and information preparation for programs under the Arctic Environmental Protection Strategy (AEPS), including the Arctic Monitoring and Assessment Program (AMAP), Conservation of Arctic Flora and Fauna (CAFF) and Protection of the Arctic Marine Environment (PAME).

Our Arctic work has been strengthened by close support from and cooperation with the Government of Russia. The Russian Minister of the Environment, Mr. Victor I. Danilov-Danilyan, visited Arendal. Together with the Norwegian Minister of the Environment, Mr. Thorbjørn Berntsen, and many other distinguished participants, he attended an Executive Seminar on «The Role of the Electronic Highway in the Preparation of Environmental Information for Decision-Making» hosted by UNEP/GRID-Arendal. This occasion was also the setting for the signing of a memorandum of understanding between UNEP and the European Environment Agency (EEA).

Consultations with the Government of New Zealand have progressed substantially towards an arrangement with UNEP on the establishment of GRID-Christchurch using GRID-Arendal as a model.

Our Baltic activities, managed from our branch office in Stockholm, included the development of an Internet on-line Baltic Sea drainage basin GIS and map database. This became our most popular product on the World Wide Web.

Since 1994, UNEP/GRID-Arendal, in cooperation with UNEP's Regional Office for Europe, has implemented UNEP's Environment and Natural Resources Information Network (ENRIN) project in countries with economies in transition in Central and Eastern Europe. In 1995 work has continued to focus on capacity building at the national level.

Our cooperation with the Consultative Group for International Agriculture Research (CGIAR) on the use of GIS in agricultural research has been another important activity.

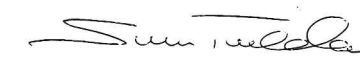
UNEP/GRID-Arendal has provided active technical support to the development of UNEP's new global communication network. A new MERCURE A station in Arendal will increase our opportunities for active participation in this network.

The total turnover in 1995 increased to NOK 16 million from 11 million the previous year.

The findings of an external evaluation team, which completed its work September 1995, were complimentary of work performed by UNEP/GRID-Arendal and helped to focus priorities on a further strengthening of our institution.

UNEP/GRID-Arendal expanded to a total staff of 20 in 1995, and moved into a newly constructed wing in the Longum Park Technology Center.

A highly motivated staff, a well functioning Board and active feedback from our clients have been major factors behind UNEP/GRID-Arendal's encouraging performance in 1995.

Svein Tveitdal
Director



Leif E. Christoffersen
Chairman of the Board

UNEP/GRID-Arendal



UNEP/GRID-Arendal was established in 1989 by UNEP and the Norwegian Ministry of Environment as a foundation subject to Norwegian laws and regulations. As a part of the global GRID network of cooperating centers, UNEP/GRID-Arendal aims at being a center of excellence for improving the accessibility and the application of scientific knowledge about the environment to policy formulation and decision-making processes. UNEP/GRID-Arendal concentrates its efforts on the collection, integration, analysis and dissemination of environmental data from existing sources.

work of cooperating centers, UNEP/GRID-Arendal aims at being a center of excellence for improving the accessibility and the application of scientific knowledge about the environment to policy formulation and decision-making processes. UNEP/GRID-Arendal concentrates its efforts on the collection, integration, analysis and dissemination of environmental data from existing sources.



Longum Park Technology Center.

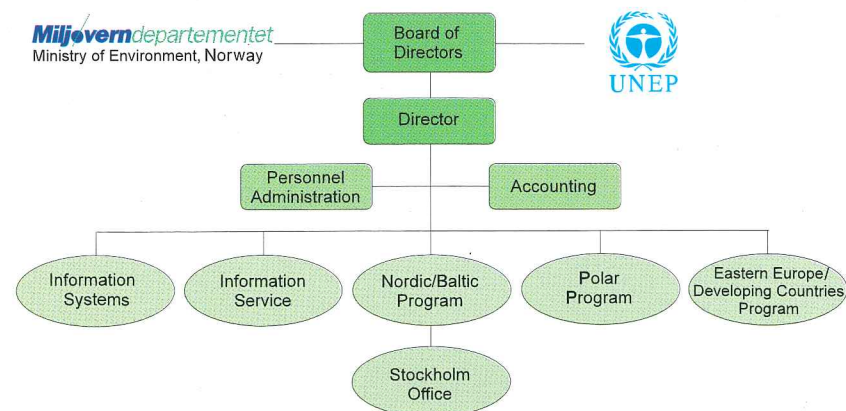
Photo: Per Lundén

UNEP/GRID-Arendal's Location

UNEP/GRID-Arendal is located in the Longum Park Technology Center in Arendal, a city on the southern coast of Norway. Longum Park is a unique center housing high technology services and promoting cooperation and network potential among its 15 firms and 150 employees.

UNEP/GRID-Arendal's branch office for Nordic/Baltic activities is located at the Department of Systems Ecology, University of Stockholm, Sweden.

UNEP/GRID-Arendal's Organizational Structure



UNEP/GRID-Arendal's Long-term Objectives

From the Executive Summary of UNEP/GRID-Arendal's Strategic Plan:

Operating within UNEP's global framework, UNEP/GRID-Arendal's activities serve the UN system and its member countries. Six key long-term objectives have been articulated for the future:

The Arctic

To assume full responsibility for serving as an effective regional node for the Arctic area within UNEP's Division of Environment Information and Assessment (DEIA).

The Antarctic

In collaboration with an institution on the Southern Hemisphere, to serve as an effective regional node for the Antarctic within the UNEP/DEIA system.

Norway

To be an efficient GRID node for Norway. It shall become the key link between Norway and the UN system in providing and facilitating environmental information.

Nordic countries with adjacent seas

To contribute to the development of a Nordic GRID network.

Global

To strengthen UNEP's global environmental management, assessment and reporting functions. Activities under this heading must reflect UNEP's current priorities and regional programs.

Methodological development

To develop and improve methods related to the use of UNEP/GRID-Arendal's database technology, GIS, remote sensing and telecommunications technologies.

UNEP/GRID-Arendal's Board of Directors



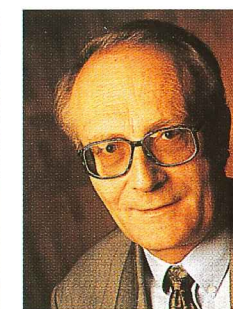
Leif E. Christoffersen
Chairman of the Board



Hans Alders
Director
Regional Office for Europe
UNEP



Harvey Croze
Assistant Executive Director
Division of Environment
Information and Assessment
UNEP



Harald Dovland
Director
Norwegian Institute for
Air Research



Herdis Meihack Engen
County Council
Representative



Tove Strand Gerhardsen
Director
Research Council of Norway



Lars-Erik Liljelund
Director
Environmental Advisory
Council
Ministry of Environment,
Sweden



Odd Rogne
Executive Secretary
International Arctic
Science Committee



Øyvind Schreiner
Head of Department
Norwegian Pollution
Control Authority

UNEP/GRID-Arendal's Statement of Accounts

Balance sheet as per December 31, 1995

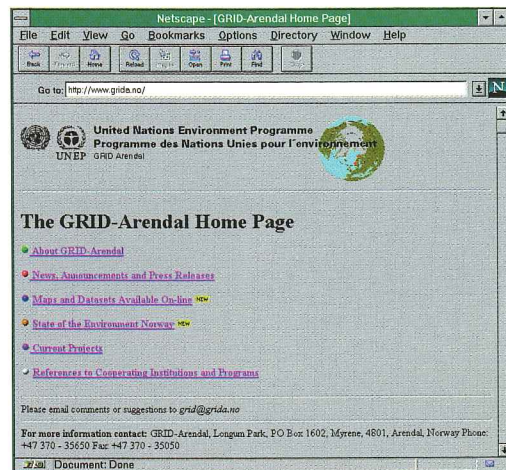
	1995	1994
Current assets	7 562 473	5 326 949
Fixed assets	524 297	196 313
Total assets	8 086 770	5 523 262
Short-term liabilities	4 576 461	2 714 710
Equity	3 510 309	2 808 552
Total liabilities and equity	8 086 770	5 523 262

Profit and loss account for the period January 1, to December 31, 1995

	1995	1994
Operating revenues	16 082 388	11 038 836
Operating expenses	15 639 009	10 493 284
Operating result	443 379	545 552
Net financial items	258 378	207 493
Result for the year	701 757	753 045

The above statement of accounts has been audited by State Authorized Public Accountant Terje H. Holst, KPMG Peat Marwick, Arendal.

UNEP/GRID-Arendal's Focus on the Internet

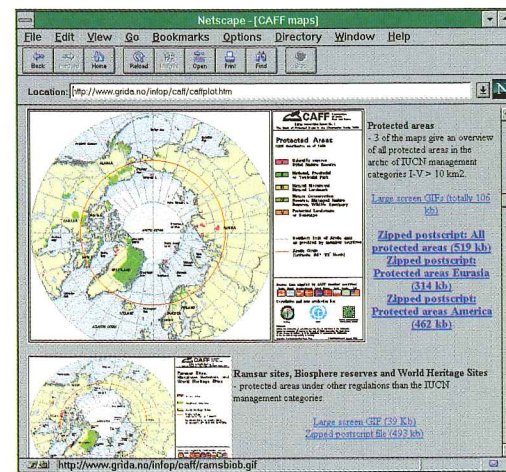


A main objective for UNEP/GRID-Arendal is dissemination of environmental information. Up-to-date, reliable and easily understandable information for both decision-makers and the public is needed to support policy-making processes and increase public awareness. Our information is public domain, and the more users sharing and using it, the higher is its social value and impact.

1995 was the year when information technology through the World Wide Web (WWW) gave us a new tool to reach more users with our data and information products. The number of people worldwide accessing Internet was approximately 50 million in December 1995. In Norway 13% of the population currently has access to the Internet, and its use will increase dramatically in years to come.

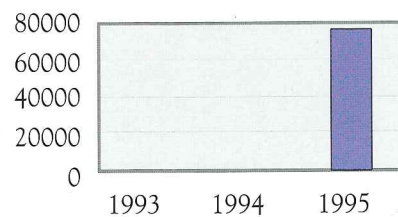
Some highlights of 1995 were:

- the first indicator-based multi-media state of the environment report in the world on WWW, prepared by UNEP/GRID-Arendal in cooperation with the Norwegian Ministry of the Environment. The report was released on the Internet by the Norwegian Minister of the Environment, Thorbjørn Berntsen in July,
- more than 77 000 pages have been downloaded from our WWW site since June,
- 2 000 maps and data sets were disseminated to users through WWW,
- in December our state of the environment report was selected by the Norwegian Internet Guide to be among the "top ten" in Norway.

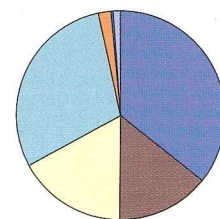


The statistics below clearly show the soaring development in UNEP/GRID-Arendal's dissemination of environmental information through the Internet.

On-line queries gopher/www

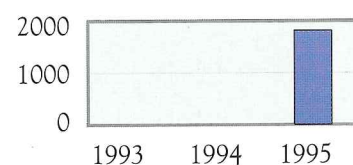


WWW. Domain access. 1995



- Norway
- Nordic
- Europe
- No Am
- So Am
- Asia
- Africa
- Aus

On-line distribution of maps and data sets



UNEP/GRID-Arendal's Focus on Telecommunications

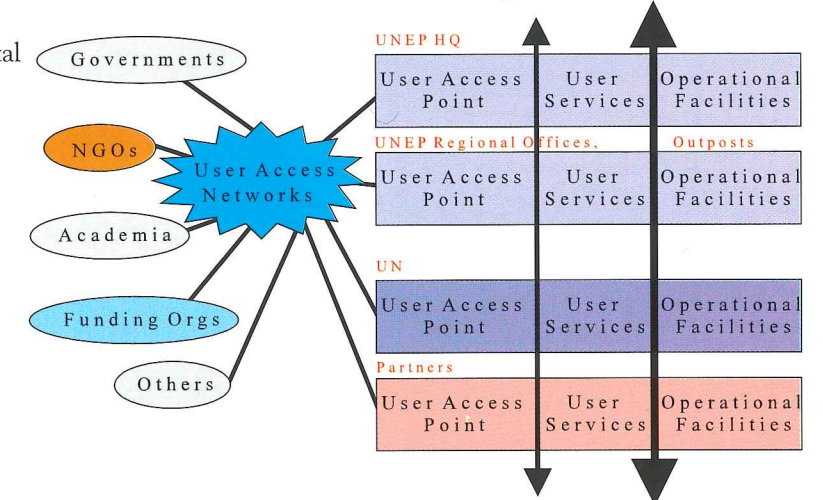
Contribution to the development and installation of MERCURE and the UNEPnet

UNEPnet

The UNEP international environmental internet (the "green global lane")

- developed by UNEP
- using cost-effective modern data communications
- designed to better meet the needs of developing countries for timely and comprehensive environmental information.

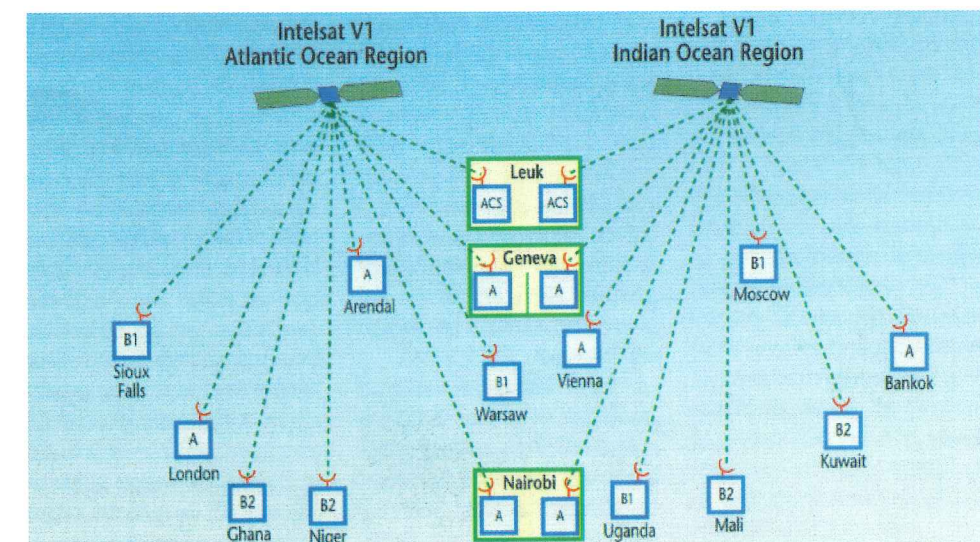
UNEPNET - Objectives



The backbone of UNEPnet is a satellite-based communications system called MERCURE. The MERCURE project will result in an initial array of sixteen ground antenna stations around the world, communicating through "Intelsat" satellites located over the Indian and Atlantic Oceans. This will allow UNEP Headquarters and Regional Offices, national environment agencies and scientific partners to exchange documents, environmental data, images and messages economically, rapidly, easily and reliably. The MERCURE system will provide long-term flexibility by servicing users in hundreds of countries. MERCURE is donated to UNEP by member states of the European Space Agency (ESA).

UNEP/GRID-Arendal is acting as the technical coordinator in the implementation of this unique environmental internet network which will be operational in 1996. As shown below, one of the 7.3 m parabola antennas will be located at UNEP/GRID-Arendal. This antenna has been funded by the Norwegian Ministry of Environment and UNEP/GRID-Arendal.

MERCURE



The objective of this unique environmental internet network is to enhance access to environmental information products from UNEP and other sources. This will give national and international policy-makers and the public access to the most up-to-date environmental information. Research institutions, involved in a range of environmental issues, will now be able to link together through UNEPnet.

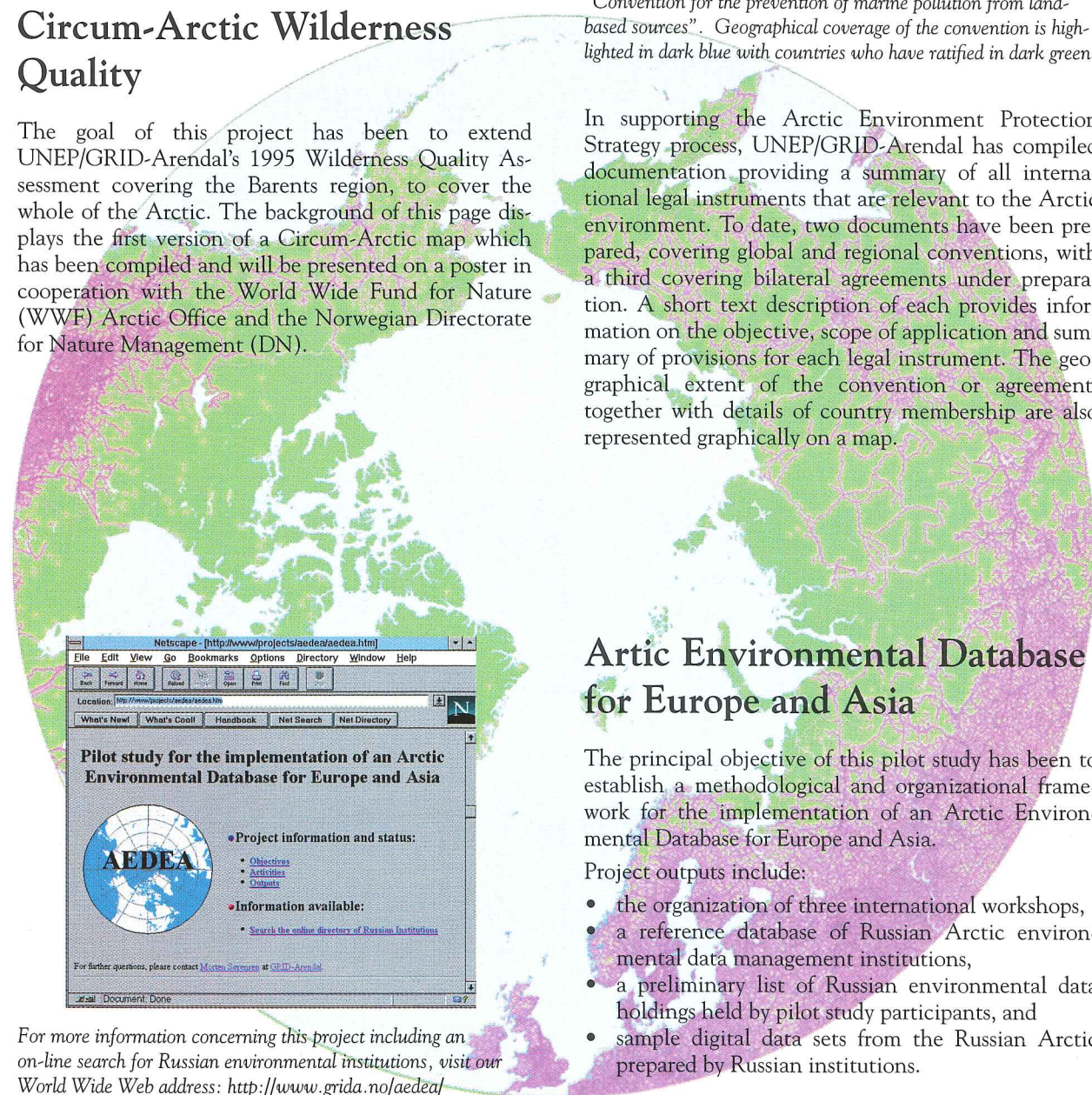
UNEP/GRID-Arendal's Polar Focus

The Arctic

The main Arctic focus in 1995 has been data and information preparation for programs under the Arctic Environmental Protection Strategy (AEPS), including the Arctic Monitoring and Assessment Program (AMAP), Conservation of Arctic Flora and Fauna (CAFF), Protection of the Arctic Marine Environment (PAME) and support to AEPS' Indigenous Peoples' International Secretariat. Other activities include cooperation with Russian institutions to compile environmental data and information on the Russian Arctic and the preparation of information products from the Barents Region.

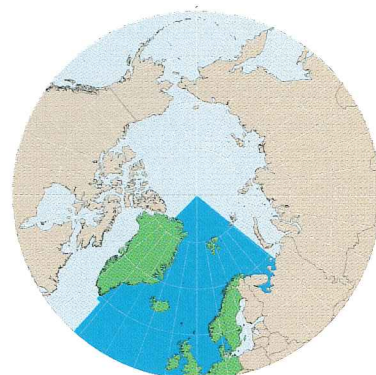
Circum-Arctic Wilderness Quality

The goal of this project has been to extend UNEP/GRID-Arendal's 1995 Wilderness Quality Assessment covering the Barents region, to cover the whole of the Arctic. The background of this page displays the first version of a Circum-Arctic map which has been compiled and will be presented on a poster in cooperation with the World Wide Fund for Nature (WWF) Arctic Office and the Norwegian Directorate for Nature Management (DN).



For more information concerning this project including an on-line search for Russian environmental institutions, visit our World Wide Web address: <http://www.grida.no/aedea/>

Arctic Conventions



"Convention for the prevention of marine pollution from land-based sources". Geographical coverage of the convention is highlighted in dark blue with countries who have ratified in dark green.

In supporting the Arctic Environment Protection Strategy process, UNEP/GRID-Arendal has compiled documentation providing a summary of all international legal instruments that are relevant to the Arctic environment. To date, two documents have been prepared, covering global and regional conventions, with a third covering bilateral agreements under preparation. A short text description of each provides information on the objective, scope of application and summary of provisions for each legal instrument. The geographical extent of the convention or agreement, together with details of country membership are also represented graphically on a map.

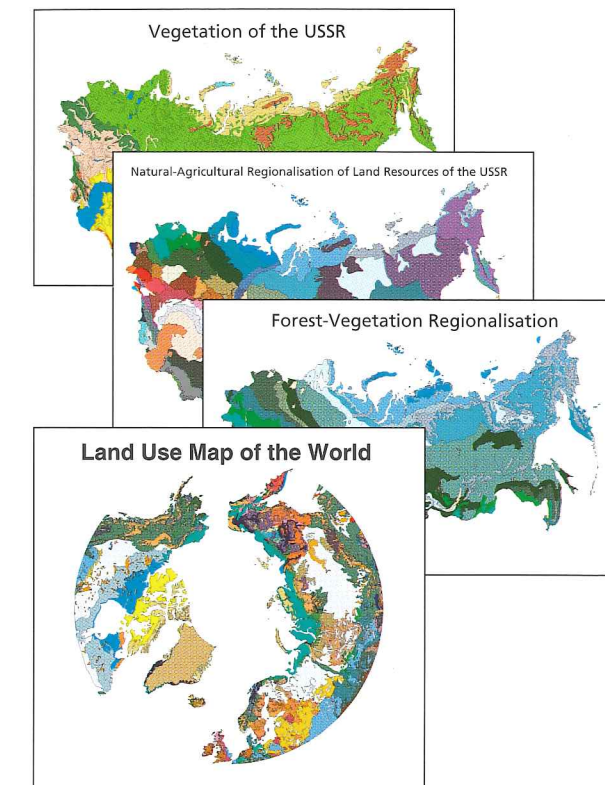
Arctic Environmental Database for Europe and Asia

The principal objective of this pilot study has been to establish a methodological and organizational framework for the implementation of an Arctic Environmental Database for Europe and Asia.

- Project outputs include:
- the organization of three international workshops,
 - a reference database of Russian Arctic environmental data management institutions,
 - a preliminary list of Russian environmental data holdings held by pilot study participants, and
 - sample digital data sets from the Russian Arctic prepared by Russian institutions.

Circumpolar Ecoregions

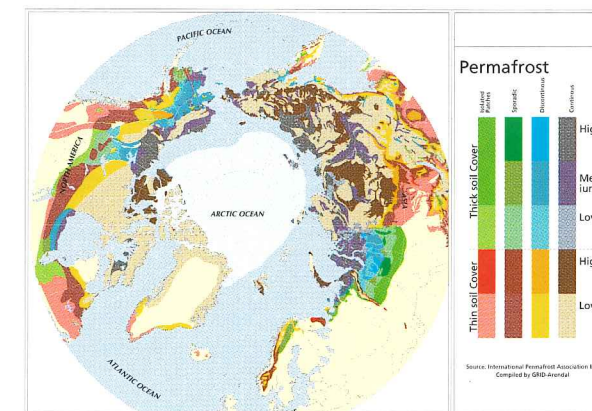
In order to investigate the possibility of creating a Circumpolar Map of Arctic Ecoregions, this project focused on building a data foundation for a circumpolar ecoregion classification, with particular regard to the Russian Arctic. Based on a preliminary survey of Russian small-scale spatial data sources, a set of analogue and digital data sets was selected to represent such themes as bedrock and surficial geology, land surface forms, climate, permafrost, hydrology, soils, vegetation, wildlife, land use/land cover and cultural and ecological regionalization patterns. Cooperating institutions include the United States Environment Protection Agency (USEPA), the Norwegian Directorate for Nature Management (DN), the United States Geological Survey (USGS), Environment Canada, Moscow State University, the Soil Institute of the Russian Academy of Agriculture, the Institute of Environmental Conservation of the Russian Ministry of Environmental Protection and Natural Resources, the Arctic Monitoring and Assessment Programme and the World Conservation Monitoring Centre (WCMC).



Three examples of data sets in the Circumpolar Arctic Ecoregions project database; Forest-Vegetation regionalization, Vegetation of the USSR, Natural-Agricultural Regionalization of Land Resources of the USSR.

The International Arctic Environmental Data Directory (ADD)

ADD is a cooperation between institutions in the Arctic countries aiming at providing the best possible gateway to all Arctic environmental data. ADD is an activity under the International Arctic Science Committee (IASC). For external users of Arctic data, we especially recommend ADD's homepage, maintained by UNEP/GRID-Arendal and linking to other collaborating organizations' directories holding Arctic environmental data and information. Visit our World Wide Web address: <http://www.grida.no/add/>



The circumpolar permafrost map compiled by the International Permafrost Association is an example of a digital product in the Arctic Environmental Database for Europe and Asia.

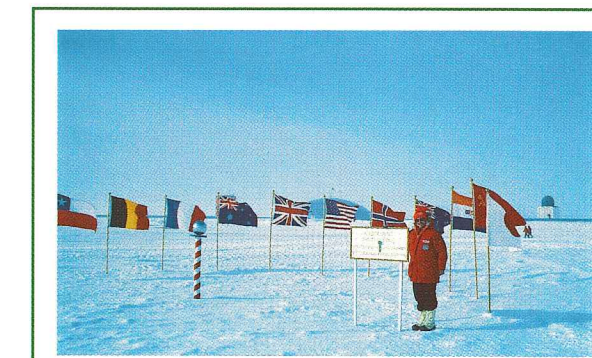


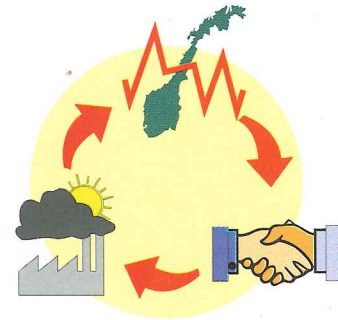
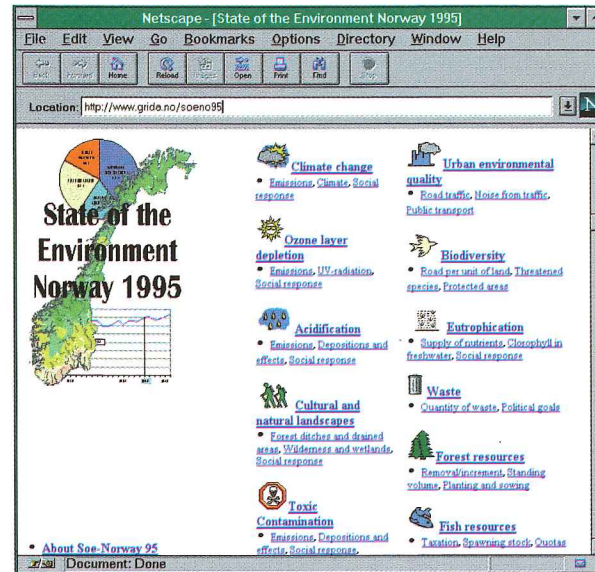
Photo: Odd Rogne

The Antarctic

Consultations with the Government of New Zealand have progressed substantially towards an arrangement with UNEP on the establishment of UNEP/GRID-Christchurch with UNEP/GRID-Arendal as a model. GRID-Christchurch is co-located with the International Centre for Antarctic Information and Research (ICAIR), and is expected to be in operation during the first half of 1996. A collaborative arrangement between UNEP/GRID-Arendal and GRID-Christchurch will increase UNEP's capacity significantly for preparing environmental information for decision-making and raising awareness on matters related to the Antarctic environment. The first major output from this cooperation is expected to be a State of the Antarctic Environment Report requested by UNEP for the UN General Assembly. For environmental information on the Antarctic, visit "Gateway to Antarctica": <http://icair.iac.org.nz/>

UNEP/GRID-Arendal's Focus on Norway

The State of the Environment Norway (SoE-N) 1995 on the Internet



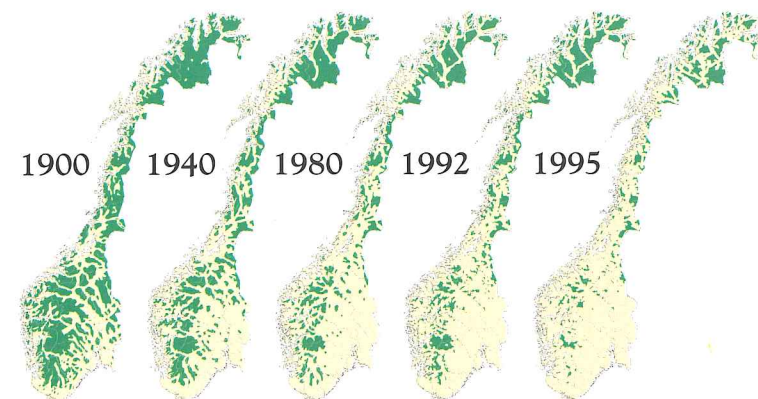
Pressure: Human activities put pressure on the environment in different ways, for example through emissions of SO₂ and NO_x.
State: This pressure is reflected in an altered quality and quantity of natural resources, for example increased acidity in fresh water.
Response: Society responds to limit these alterations and attempts to repair damages to the environment through various methods and measures, for example adding lime to water courses.

UNEP/GRID-Arendal's Annual Report 1992 announced the production of SoE-N 1992 which was prepared for the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in June of that year. This state of the environment report was produced in diskette form and presented as a PC-based information system, using the most widely available tools in information technology at that time.

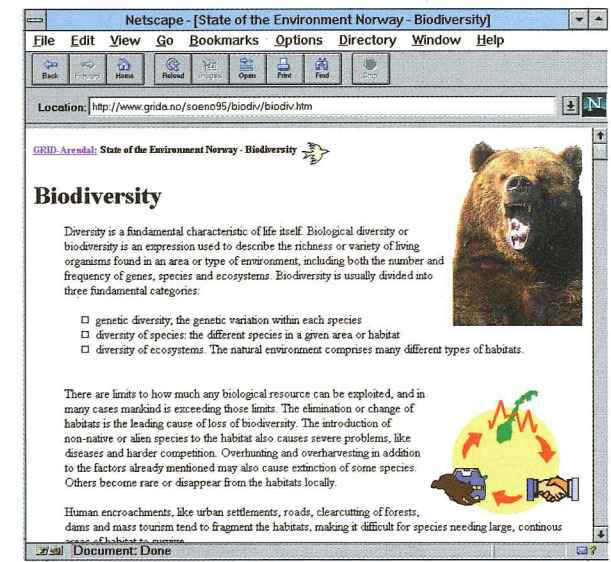
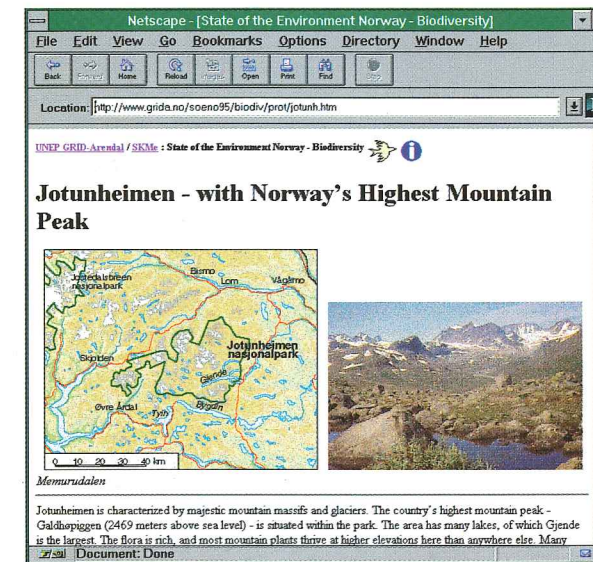
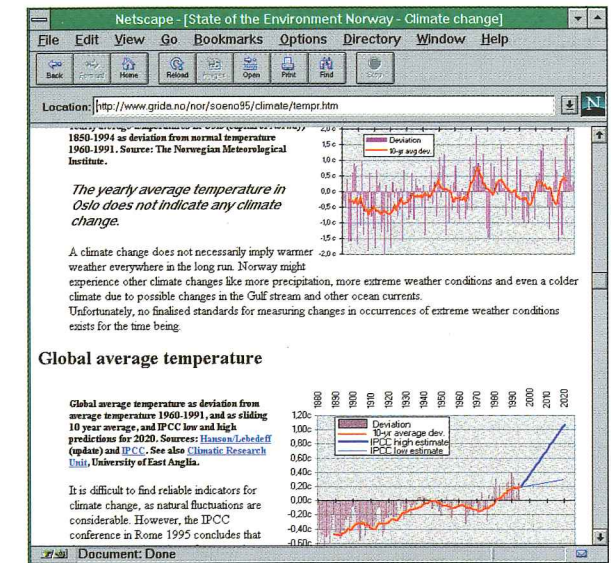
An Internet version was prepared by UNEP/GRID-Arendal in 1995. This was produced in cooperation with the Norwegian Ministry of the Environment, the Norwegian Mapping Authority, the Norwegian Pollution Control Authority, Statistics Norway, the Directorate for Nature Management and UNEP. This was the first comprehensive indicator-based national state of the environment report on the Internet/WWW. It was released on the Internet by the Norwegian Minister of the Environment, Thorbjørn Berntsen, in July 1995.

SoE-N 1995 report is based on sets of environmental indicators. These indicators are based on recommendations from the Nordic Council, showing pressure, state and social response to various environmental issues. The Internet user obtains a graphic presentation of the indicators, and is presented with an easy overview of national goals for environment protection. Performance is measured against established goals. International treaties and agreements signed or ratified by Norway are also shown. Links to relevant environmental databases are provided. Visit our Internet/World Wide Web address: <http://www.grida.no/soeno95/>

Wilderness in Norway 1900-1995



Wilderness territory is defined as areas lying more than 5 kilometers from roads, railways and power lines.



Graphics taken from SoE-N 1995.

SoE-N 1995 is constructed as follows:

The first page is a menu showing different problem areas or topics. When choosing a topic, a short overview of the problem is given. Graphics on pressure, state and response indicators are presented. Additional background information can be found under an information button. SoE-N will be regularly updated with new information and expanded with additional sets of indicators as deemed appropriate. The report will be translated into Norwegian and launched in March 1996. It is expected to be used extensively by Norwegian schools.

The Internet version of SoE-N is an example of the use of new technology in the field of electronic networks to greatly augment the number of users otherwise not reached by traditional means. Common guidelines and indicators are being sought for the preparation of SoE reports globally.

UNEP/GRID-Arendal's Focus on Eastern Europe

UNEP/ENRIN in Central and Eastern Europe

UNEP's Environment and Natural Resources Information Network (ENRIN) project is designed to catalyze and assist capacity building of environmental information networks in developing countries and countries with economies in transition of Central and Eastern Europe. Since 1994, UNEP/GRID-Arendal has been implementing this project, focusing in particular on capacity building at the national level. This includes assistance in strengthening or providing cooperating environmental institutions with the necessary competence in GIS, remote sensing and other environmental information management tools.

The project's main objective is to improve the availability of environmental data and information for decision-makers and the general public. Activities in 1995 included a number of country assessment reports which can be accessed via the Internet: <http://www.grida.no/enrin/>

Published Reports	Reports in Preparation
Estonia	Azerbaijan
Latvia	Armenia
Lithuania	Kazakhstan
Russia	
Ukraine	
Georgia	
Hungary	

Regional workshops/seminars were held in Russia (Moscow), Estonia (Jäeneda), Georgia (Kazbegi) and Ukraine (Kyiv) to present national assessments and to discuss the UNEP/ENRIN project. Reports from these meetings have been published and are available from UNEP/GRID-Arendal.

These seminar activities were complemented by missions to the countries and the attendance of international conferences and meetings, such as 'Environment for Europe' in Sofia. In addition, several meetings with relevant cooperating partners took place in Arendal.

ENRIN feasibility studies were completed for Hungary and Russia and are underway in Georgia and Ukraine. Funds for the proposed three-year project implementation in Hungary were granted by the Swiss Government, and project implementation will start in January 1996.

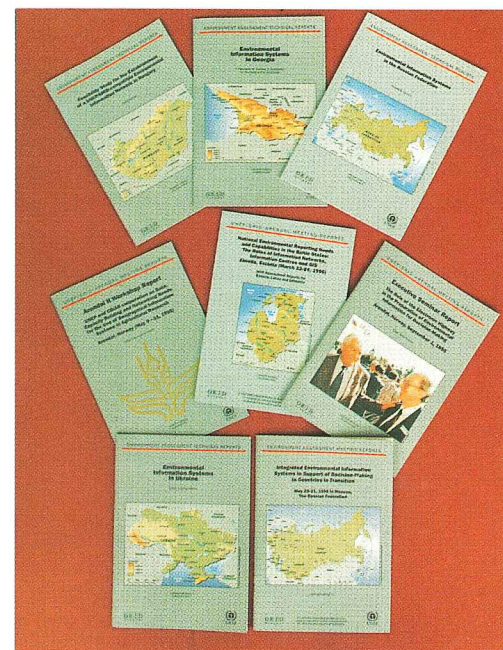


Photo: Stern Bay Stryvold



"Environment for Europe"
Conference in Sofia October 1995

Photo: Otto Simonett

Environment Information Network in Central and Eastern Europe

Countries - Status, January 1996



Outlook

In 1996/97, UNEP/GRID-Arendal will continue the UNEP/ENRIN implementation at the national level in Central and Eastern Europe; UNEP/GRID-Geneva will focus on regional environmental programs; UNEP's Regional Office for Europe (RoE) is coordinating the activities.

Focus will be on:

- institutional issues: set-up, sustainability, data release and pricing policy, UNEP terms and conditions for cooperation,
- networking issues: newsletters and workshops, strengthening electronic capacities, cooperation with other international initiatives such as The European Union (EU), The United Nations Development Program (UNDP), The Organization for Economic Cooperation and Development (OECD),
- information management: SoE reporting for decision-makers and the general public, use of the Internet, visual communication, directories (meta database).

By the end of the biennium, it is expected that environmental information system assessments will be completed for all the countries in the region participating in ENRIN. Through further network implementations, relevant information on the state of the environment will be made available to a wide audience. Visit our Internet/World Wide Web address: <http://www.grida.no/enrin/>

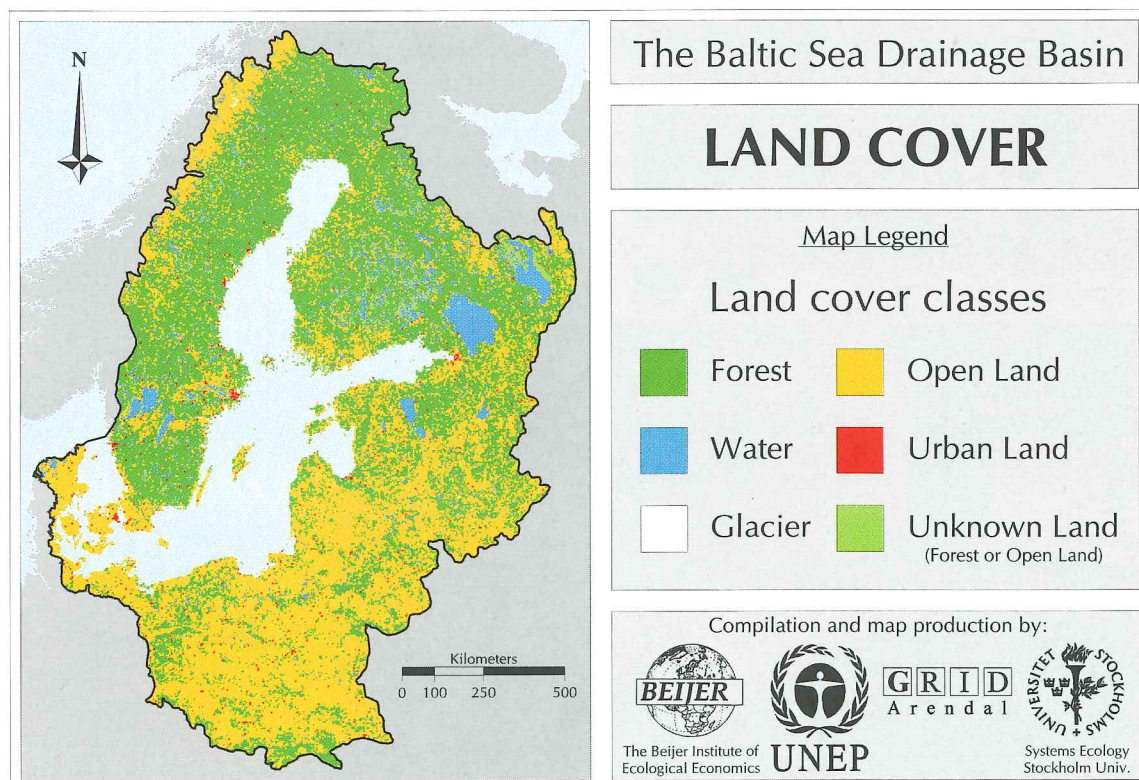
UNEP/GRID-Arendal's Focus on the Baltic

Environmental GIS Database and "Atlas" of the Baltic Region on the Internet

In August 1995, UNEP/GRID-Arendal made available on the Internet a comprehensive GIS and map database of the entire Baltic Sea drainage area. This database has been recognized as the most comprehensive public domain multi-national and multi-thematic GIS and map database on the Internet within Europe. The database was initially created during the EU Environmental Research Program (1991-1994). UNEP/GRID-Arendal's Baltic Drainage Basin Project is implemented in cooperation with the Beijer Institute and the Department of Systems Ecology, Stockholm University, Sweden. During the period from August sets 1995, more than 8 000 visits were registered on the homepage of the database, and 1 500 GIS data sets and cartographic map files have been downloaded. A CD-ROM version of this database will be released in the Spring of 1996.

The database covers the entire Baltic Sea drainage area, fully or partly, including the following countries: Denmark, Norway, Sweden, Finland, Russia, Belarus, Estonia, Latvia, Lithuania, Ukraine, Poland, The Czech Republic, Slovakia and Germany. The following thematic layers are included:

- administrative units (first or second sub-national level) with attributes (names, urban/rural population)
- land cover (six classes)
- coastline
- meso-scale drainage basins (82 sub-basins) with attributes (nitrogen and phosphorous loads)
- arable land distribution
- pasture land distribution
- population density distribution
- wetland distribution



Land Cover is a crucial determinant for many environmental processes taking place in the Baltic Sea drainage area. This map is one of several which can be found in the on-line environmental "atlas" and GIS database at the UNEP/GRID-Arendal WWW server: <http://www.grida.no/baltic/>

UNEP/GRID-Arendal's Global Focus

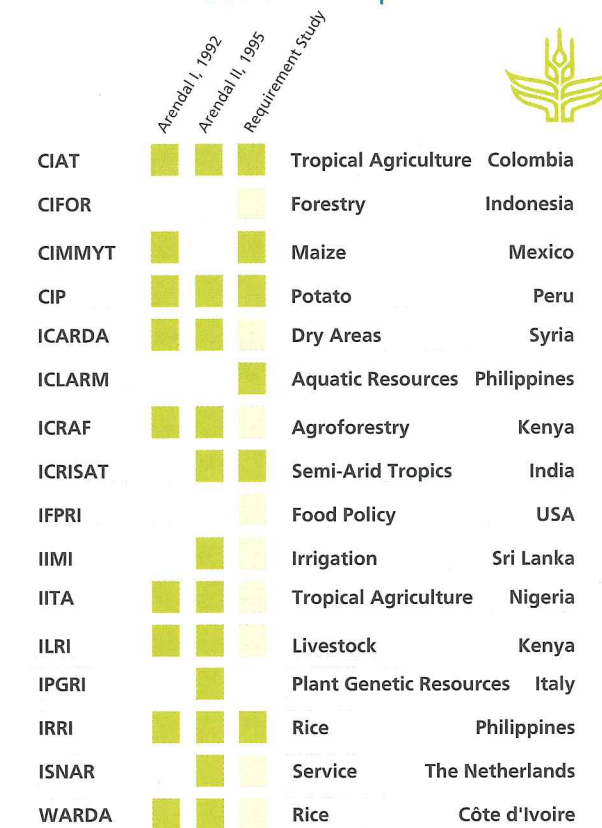
Use of Geographic Information Systems in Agricultural Research

UNEP/GRID-Arendal is implementing a joint UNEP/CGIAR project which aims at establishing long-term links between UNEP and the Consultative Group for International Agricultural Research (CGIAR). The aim is to use the GRID and CGIAR networks to compile and distribute high quality natural resource and socio-economic digital data sets. The project assists CGIAR centers to assess their capacity and needs to use such technologies and data sets in agricultural research.

CGIAR is supporting 16 international agricultural research centers dedicated to promoting sustainable agriculture for food security in developing countries. There has been an increase in interest among the CGIAR centers in the use of GIS, as research activities are shifting from single crop analysis to integrated ecoregional approaches, opening a broad field for GIS applications.

During visits to a first set of CGIAR centers, data and institutional development needs were assessed and will be compiled in a requirement study report. GRID services were delivered upon request from individual CGIAR centers. The project is likely to be extended for a new two-year period starting in April 1996, focusing on methodological questions, training needs and translating the results of the requirement studies into concrete action.

CGIAR Participation



For more information, visit <http://www.grida.no/cgiar/>

Palestinian Environmental Information and Decision Support System

The Middle East Peace Process and the Oslo agreement, following the Declaration of Principles in 1993, has created a new urgency to provide decision support to solve the environmental problems of the occupied territories. There is an apparent need for up-to-date environmental information for decision support and environmental awareness to ensure sustainable development of the Palestinian reconstruction process.

The overall goal of this project, funded by NORAD, is to help the Palestinian government to acquire the necessary capacity and systems needed for sound environmental decision-making, for education and public environmental awareness.

This will be accomplished through support to the Environmental Planning Directorate (EPD) of the Ministry of Planning and International Cooperation. The EPD will, through this project, acquire the neces-

sary capacity to facilitate this process efficiently. In addition, a framework for future relations with other local and international agencies will be developed.

The proposed project will be implemented in two phases. A short-term (four-month) feasibility phase will result in a three-year implementation proposal.



from l. to r.: Svein Tveitdal, UNEP/GRID-Arendal Director, Dr. Mohammed Ajjour, Director, Directorate for Environmental Planning, Ministry of Planning and International Cooperation, Palestine. Mr. Abdull-Nasser A. Dawoud, Director, the Government Computer Center, Ministry of Planning and International Cooperation, Palestine

Photo: Stein Bay Styrvold

UNEP/GRID-Arendal as Conference Host

ARENDALE II Workshop:

UNEP and CGIAR cooperation on Data, Capacity Building and Networking Needs for the Use of Geographic Information Systems in Agricultural Research
Arendal, May 9-11, 1995

The workshop was a major activity of the joint UNEP/CGIAR project whose long-term goals are to create lasting links between CGIAR, the UNEP/GRID network and other expert institutions in the fields of GIS and remote sensing. Representatives from twelve of the sixteen agricultural research institutes supported by the CGIAR, along with 20 experts and representatives from UNEP and other international organizations discussed how the objectives of the project can be translated into concrete action. As a follow-up, the project financed the improvement of population data, published a monthly newsletter, and several CGIAR centers were visited. The purpose of these visits was to create a catalogue of available data sets, further assess training needs and initiate proposals for collaborating projects. The proceedings from the workshop have been summarized in a report which is available from UNEP/GRID-Arendal.



Participants, Arendal II Workshop.

Photo: Per Lundén

UNEP/GRID-Arendal Executive Seminar:

The Role of the Electronic Highway in the Preparation of Environmental Information for Decision-Making
Arendal, September 1, 1995

Representatives from UNEP, the European Environment Agency, the World Bank and the governments of Russia and Norway met at UNEP/GRID-Arendal to discuss the role of the electronic highway in providing environmental information for decision-makers and the general public.

The institutions, organizations and governments present recognized the rapidly growing importance of electronic networks for the exchange and harmoniza-

tion of environmental information in a global context. Representatives present were encouraged to cooperate in the preparation of common guidelines and indicators for the presentation of SoE reports on the Internet.

This seminar was also the setting for the signing of a memorandum of understanding between UNEP and the European Environment Agency. This agreement formalizes cooperation between the two agencies and is based on the principles of reciprocity and work sharing.



The Director of UNEP/RoE, Hans Alders, and the Executive Director of the EEA, Domingo Jiménez-Beltrán, signing the Memorandum of Understanding between the EEA and UNEP, Arendal, September 1, 1995.

Photo: Per Lundén



The Norwegian Minister of the Environment Thorbjørn Berntsen during his presentation at the seminar.

Photo: Per Lundén

UNEP/GRID-Arendal and Staff Publications 1995

Brox, A., System Specification UNEP NET, Global computer Internet protocol network, version 1.0 - 4.0 31/3-95 UNEP Telecommunications of Electronic Services Specification.

Brox, A., UNEP NET Brochure, March -95. UNEP Telecommunication of Electronic Services.

Brox, A., MERCURE - Unique Environmental Network ready in 1996. Article in NERA World, No. 4 1995.

Denisov, N.B., Environmental Information Systems in the Russian Federation. UNEP/GRID Arendal 1995. ISBN: 92-807-1517-8.

Denisov, N.B., Henry, D.J., 1995. Circumpolar Arctic Ecoregions. Project Report. UNEP/GRID-Arendal.

Harris, A.J.L., Rothery, D.A., Carlton, R.W., Langaas, S., Mannstein, H. 1995. Non-zero saturation of AVHRR thermal channels over high temperature targets: evidence from volcano data and a possible explanation. International Journal of Remote Sensing, Vol. 16, No.1, 189 - 196.

Husby, E., UNEP/GRID-Arendal Report - Inventory of data sources for the Barents Region. Including a Map Survey by T.A. Vorobieva and N.B. Denisov, Moscow State University.

Husby, E., Henry, D., DN-Report 1995-4, Wilderness Quality Mapping in the Euro-Arctic Barents Region. ISBN 82-7072-180-8.

Husby, E., Henry, D., Wilderness Quality Mapping in the Euro-Arctic Barents Region in Northern Wilderness Areas: Ecology, Sustainability, Values, pages 319 - 339. ISBN 951-634-456-9.

Kapitsa, A.P., Denisov, N.B., Golubeva E.I., et.al. The Preliminary Methodological Conclusions Related to the Creation of an Environmental Arctic Database. In: ADD seminar proceedings, Moscow, Sept. 1995.

Kapitsa, A.P., Golubeva, E.I., Denisov, N.B., et. al. Some Methodological Aspects of the Investigation of the State of Arctic Ecosystems. In Global Changes and Geography. The IGU Conference Abstracts. Moscow, 1995, p.147.

Langaas, S., Tveite, H., 1995. Selected papers from the DCW data quality project. Project Report No. 1/1995 DCW & Data Quality Project, UNEP/GRID-Arendal.

Langaas, S., 1995. Completeness of the Digital Chart of the World.

Project Report No. 2/1995 DCW & Data Quality Project, UNEP/GRID-Arendal.

Langaas, S., Smith, C.G., 1995. A Survey of Digital Chart of the World Use and Data Quality. Project Report No. 3/1995 DCW & Data Quality Project, UNEP/GRID-Arendal.

Langaas, S., 1995. Cartographic Data and Data Quality Issues. Presented at the UNEP and CGIAR Workshop (Arendal II), Arendal, Norway, 11- 14 June 1995.

Langaas, S., Tveite, H., 1995. To Characterize and Measure Completeness of Spatial Data: A Discussion Based on the Digital Chart of the World (DCW). In: J.T. Bjerke (ed.) Proceedings from the 5th Scandinavian Research Conference on Geographical Information Systems, 12-14 June 1995, Trondheim, Norway, pages 155 - 161.

Langaas, S., 1995. Night-time observations of West-African bushfires from space. Studies on methods and applications of thermal NOAA/AVHRR satellite data from Senegal and Gambia. Dissertation for Dr.Scient. (Ph.D.) degree, University of Oslo. ISBN 82-7648-006-3.

Martin, G., Editor, Report from Arendal II Workshop, 9-11 May 1995, Arendal, Norway "UNEP and CGIAR cooperation on Data, Capacity Building and Networking Needs for the Use of Geographical Information Systems in Agricultural Research". 39 pages. UNEP/EAP.MR/95-9. GA/205005-95/3.

Simonett, O., UNEP Environmental and Natural Resources Information Network - Countries with Economies in Transition in Central and Eastern Europe - Activities 1995.

Simonett, O., Environmental Information Networks in Georgia. Report from the Kazbegi Workshop, October 2-4, 1995.

Simonett, O., Report from the ENRIN Focal Point Seminar. Warsaw, October 26-27, 1995.

Simonett, O., Editor, Environmental Information Systems in Ukraine, Author Andrey Semichaevsky. ISBN: 92-807-1518-6.

Simonett, O., Editor, Environmental Information Systems in Georgia, Author: Georgian Ministry of Environmental Protection (EGIS Initiative Group) ISBN: 92-807-1519-4.

Simonett, O., Editor, Feasibility Study for the Establishment of a UNEP/GRID compatible Environmental Information Network in Hungary, Author: Csaba Nemes. ISBN: 92-807-1516-X.

Simonett, O., Editor, Proceedings from UNEP/OECD/IEC Moscow Seminar 29-31 May 1995. Integrated Environmental Information System in Support of Decision-Making in Countries in Transition. UNEP/EAP.MR/95-11. GA/205024-95/7.

Simonett, O., Langaas, S., Editors, Proceedings from UNEP/GRID-Arendal Baltic Workshop (Jämeda, Estonia), 23-24 March 1995 National Environmental Reporting Needs and Capabilities in the Baltic States: The Roles of Information Networks, Information Centers and GIS. UNEP/EAP.MR/95-8. GA/205024-95/4.

Simonett, O., Editor, Proceedings from UNEP/OECD Moscow seminar, Integrated Environmental Information Systems in Support of Decisions-Making in the Oblast Level in Russia, January 24-25, 1995; the Development of the Unified State Environmental Monitoring System in the Russian Federation, January 26, 1995. UNEP/EAP.MR/95-5. GA/205024-95/6.

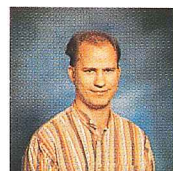
Sweitzer, J., Langaas, S., and Folke, C., 1995. Land Use and Population Density in the Baltic Sea Drainage Basin: A GIS database. Beijer Discussion Paper Series No. 63, The Beijer Institute for Ecological Economics, Stockholm.

Sweitzer, J., Langaas, S., 1995. Modelling population density in the Baltic States using the Digital Chart of the World and other small-scale data sets. In: Coastal Conservation and Management in the Baltic Region (Eds. V. Gudelis, R. Povilanskas and A. Roepstorff), Proceedings of the EUCC - WWF Conference, 3-7 May 1994 Riga - Klaipeda - Kaliningrad, pages 257-267.

Tveitdal, S., Editor, Executive Seminar Report. The Role of the Electronic Highway in the Preparation of Environmental Information for Decision-Making. Arendal, Norway, September 1, 1995 - UNEP/EAP.MR/95-19. GA/205029-95/9

Tveite, H., Langaas, S., 1995. Accuracy Assessments of Geographical Line Data Sets: The Case of the Digital Chart of the World. In: J.T. Bjerke (ed.) Proceedings from the 5th Scandinavian Research Conference on Geographical Information Systems, 12-14 June 1995, Trondheim, Norway, pages 145 - 154.

UNEP/GRID-Arendal Staff



Frode Abrahamsen
M.Sc. GIS
Polar Program
(Civil Worker from
01.02.95)



Aake Bjørke
B.Sc. Biology/Law
(BLL)
Information Manager



Bjørn Bore
Information Program
(Civil Worker from
15.03.95)



Bente Brekke
M.Sc. Biology
GIS/Database Analyst,
Polar Program
(until 01.04.95)



Arnt W.K. Brox
B.Sc. Biology
Information Systems
Manager



Nickolai B. Denisov
Ph.D. Geography/
Environmental Science
Project Manager, East-
ern Europe/Developing
Countries Program
(from 28.08.95)



Karen Folgen
B.A. Literature
Administration/
Personnel Manager



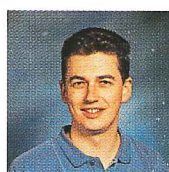
Dawn Marie Freund
B.A. Business
Mgmt/French
Project Controller



Øystein Halvorsen
M.Sc. Physics
Senior Software Engineer



Claudia Heberlein
M.Sc. Geography
Project Manager, East-
ern Europe/Developing
Countries Program
(from 20.08.95)



David Henry
B.A. Computing/
Geology
Project Manager,
Polar Program
(from 29.08.95)



Even Husby
M.Sc. Geography
Project Manager,
Polar Program



Ingrid Høgei
Administration
Assistant



Beate Strøm Johansen
M.Sc. Zoology
Project Controller
(from 28.11.95)



Inge Tuseth Knudsen
Information Program
(Civil worker from
06.12.95)



Lars Kullerud
M.Sc. Geology
Manager,
Polar Program



Sindre Langaas
Ph.D. Remote Sensing
Project Manager,
Nordic/Baltic Program



Wenche Lien
Administration
Secretary



Margaret Ohldieck
Accountant



Kjell B-E. Olsson
B.A. Geography
GIS/Database Analyst,
Polar Program
(until 31.10.95)



Otto G. Simonett
Ph.D. Geography
Manager, Eastern
Europe/Developing
Countries Program



Christopher G. Smith
B.A. Geography
GIS/Database Analyst
(until 30.11.95)



Morten Sørensen
M.Sc. Geography
Project Manager, East-
ern Europe/Developing
Countries Program



Svein Tveitdal
M.Sc. Photogrammetry
Director

UNEP/GRID-Arendal Guest Researchers



Maria D. Ananicheva.
Ph.D. Geography/
Hydrology
Institute of Geography,
Russian Academy Of
Sciences, Moscow, Russia
(June-July 1995)



Jeff Barrette
B. Sc. Nature/Soil
Resources
Department of Natural
Resources Sciences
University of
Rhode Island, USA
(May-July 1995)



Tatjana E. Khromova
Ph.D. Geography.
Institute of Geography,
Russian Academy of
Sciences, Moscow, Russia
(June 1995)



Catherine Légise
M.A. Law (BLL)
International and
French Environmental
Law, University of
Limoges, France
(August-September
1995)



Larissa Molchanova
M.Sc. Physics
Institute of Geocryology
Moscow, Russia
(June-July 1995)



Larissa Nazarenko
Ph.D. Applied Mathe-
matics/Geophysics
Inst. of North Ecology
Problems of Kola
Science Centre
Apatity, Russia
(May-July 1995)



Nickolai Tausnev
Ph.D. Applied
Mathematics
Inst. of North Ecology
Problems at Kola
Science Centre
Apatity, Russia
(April-August 1995)

Looking Forward



Harvey Croze. Assistant Executive Director.
Division of Environment Information and Assessment. UNEP

The voices of the world community heard at Stockholm, echoed in Rio, are still resonating today, enjoining UNEP to provide the information necessary to identify environmental problems, formulate policy options, guide actions and check results of those actions. The currency of UNEP is information, ranging from data showing state and trends, to integrated assessments elucidating cause and effect. Whatever the form of the information, the aim of providing it must be to inspire and guide action. The message is: Let's not just watch and measure; let's understand and do.

The governments who are our principals have in effect challenged us to look beyond the traditional bounds of the physical environment — to understand as well the pressures associated with environmental stress and to present possible responses for ameliorating impacts. UNEP's ecologists and environmental scientists are beginning to understand the language of the social and economic sciences. And vice versa, I might add.

State of the environment — SoE — reports are one of the products we are required to produce. Indeed a specific decision at the 18th Session of the Governing Council of UNEP last May requires that UNEP produce for the next Council a «new» comprehensive SoE covering the present state of the

global environment, the state of the global environment in the year 2015 taking into account such things as impacts of population, consumption and production patterns and economic development, and then to top it all off with the range of responses for virtually all environment sectors. All this to be done within existing financial resources! A tall order indeed! Perhaps, some might say, even impossible in the 20-odd months available between Governing Councils. Fortunately we had already begun thinking about a Global Environment Outlook, «GEO».

The «old» SoEs from which we are required to depart used to be typically crafted by a contracted group of wise persons drawing on their venerable science and information contacts. A large book was produced: excellent quality material stimulating debate and enhancing libraries. But from where springs the action? Where is the engagement of the policy-setters and decision-makers? How do we get the stake-holders involved?

That is what is new about «GEO»! Not just the product, which we hope will be innovative and forward-looking, but the process itself. Here is a very simple truth about UNEP: we cannot do the job we have to do alone, and we must not do it from only one point of view. In «GEO», we are embarking on a process which is founded on participation of collaborating institutions in the regions of the world and on integration of information within constructs that allow us to go beyond descriptive reporting. It is a process intended to persist beyond publication date, tracking the pledges of policy and the impact of action to 2002 and beyond.

In the preparation and presentation of «GEO», we shall draw heavily on our partners at UNEP/GRID-Arendal, and their recent success with the Norwegian SoE on the Internet. We believe that our growing network of partners can help us provide a unique view of the globe as seen from the regions.

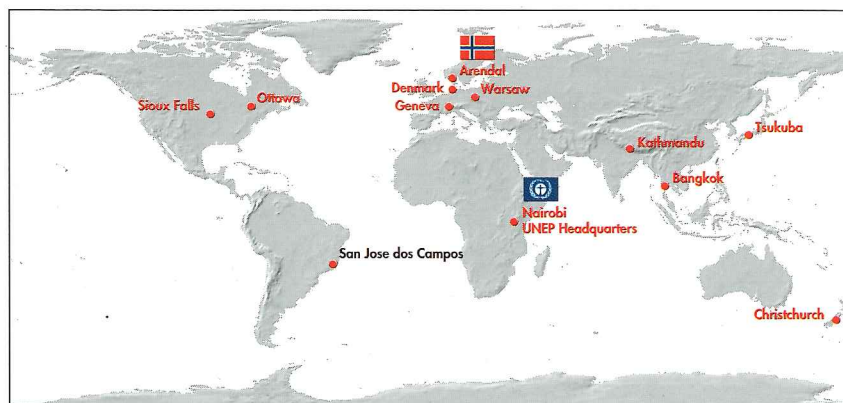


Harvey Croze

Glossary

ADD	International Arctic Environment Data Directory	ICAIR	International Centre for Antarctic Information and Research
AMAP	Arctic Monitoring and Assessment Programme	Internet	International electronic communication network
AEDEA	Arctic Environment Database for Europe and Asia	MERCURE	Satellite-based communication system, donation from 6 European countries
AEPS	Arctic Environment Protection Strategy	NGO	Non-governmental Organization
CAFF	Conservation of Arctic Flora and Fauna	PAME	Protection of the Arctic Marine Environment
CD-ROM	Compact Disc-Read Only Memory	RoE	Regional Office for Europe
CGIAR	Consultative Group for International Agricultural Research	SoE	State of the Environment
DEIA	Division of Environment Information and Assessment	SoE-N	State of the Environment Norway
DN	Directorate for Nature Management	UNCED	United Nations Conference on Environment and Development
ENRIN	Environment and Natural Resources Information Network	UNEP	United Nations Environment Programme
EPD	Environmental Planning Directorate	UNEPnet	The UNEP international environmental internet
ESA	European Space Agency	USEPA	United States Environment Protection Agency
GIS	Geographic Information Systems	USGS	United States Geological Survey
GRID	Global Resource Information Database	WCMC	World Conservation and Monitoring Centre
IASC	International Arctic Science Committee	WWF	World Wide Fund for Nature
		WWW	World Wide Web, an interacting graphical and text medium on the Internet

The UNEP/GRID Network



UNEP
 Division of Environment Information and Assessment
 P.O. Box 30552
 Nairobi, KENYA
 Tel: +254 2 623512
 Fax: +254 2 623943 / 623944
 Email: EI@info@unep.org

UNEP
 Regional Office for Europe
 C.P. 356
 Geneva Executive Center
 1219 Châtelaine Geneva, SWITZERLAND
 Tel: +41 22 979 9111
 Fax: +41 22 797 3420
 Email: halders@unep.ch
<http://www.unep.ch/>

GRID-Bangkok (Thailand)
 UNEP Environment Assessment Program for
 Asia and the Pacific
 Outreach Building
 Asian Institute of Technology
 P.O. Box 2754
 Bangkok 10501, THAILAND
 Tel: +66-2 5162124, 5245365
 Fax: +66-2 5162124, 5246233
 E-mail: grid@ait.ac.th

GRID-Canada
 Canada Centre for Remote Sensing
 Surveys, Mapping & Remote Sensing Sector
 Room 335, 3rd. Floor
 588 Booth St.
 Ottawa, Ontario K1A 0Y7, CANADA
 Tel: +1 613 947 1227
 Fax: +1 613 947 1382
 E-mail: campbell@ccrs.emr.ca

GRID-Christchurch (New Zealand)
 c/o ICAIR
 P.O. Box 14-199
 Christchurch, New Zealand
 Tel: +64 3 358 4450
 Fax: +64 3 358 4480
 Email: smith.usap@iac.org.nz
<http://icair.iac.org.nz/bio/icair.html>

GRID-Denmark
 Spangsbjerg Kirkevej 111
 Dk-6700 Esbjerg, DENMARK
 Tel: +45 75 45 45 11
 Fax: +45 75 45 45 87
 E-mail: grid-hsh@pip.dknet.dk
<http://meris.grid.aau.dk/>

GRID-Geneva (Switzerland)
 Geneva Executive Centre (GEC)
 11 chemin des Anémones
 CH-1219 Châtelaine
 Geneva, SWITZERLAND
 Tel: +41 22 979 9294/95
 Fax: +41 22 979 9029
 Telex: 422227 GRID-CH
 E-mail: rgwitt@gridi.unep.ch
<http://www.grid.unep.ch/gridhome.html>

GRID-Nairobi (Kenya)
 Box 30552
 Nairobi, KENYA
 Tel: +254 2 623439
 Fax: +254 2 623983
 Telex: 22068 UNEP-KE
 E-mail: mario.hernandez@unep.no

GRID-Kathmandu (Nepal)
 International Centre for Integrated
 Mountain Development (ICIMOD)
 4/80 Jawalakhel
 GPO Box 3226
 Kathmandu, NEPAL
 Tel: +997 1 525313
 Fax: +997 1 524509
 E-mail: icimod@mos.com.np

GRID-Sao Jose dos Campos (Brazil)
 Instituto Nacional de Pesquisas Espaciais
 Av. dos Astronautas, 1758
 Sao Jose dos Campos, SP, 12227-010, BRAZIL
 Tel: +55 123 418977 x447
 Fax: +55 123 218743
 E-mail: danton@dpi.inpe.br
<http://www.inpe.br/grid/home/>

GRID-Sioux Falls (USA)
 EROS Data Center
 US Geological Survey
 Sioux Falls, SD 57198, USA
 Tel: +1 605 594 6105/7
 Fax: +1 605 594 6589
 E-mail: grid@grid1.cr.usgs.gov
<http://grid2.cr.usgs.gov/grid.html>

GRID-Tsukuba (Japan)
 Centre for Global Environmental Research
 National Institute for Environmental Studies
 Environment Agency of Japan
 16-2, Onogawa, Tsukuba
 Ibaraki 305, JAPAN
 Tel: +81 298 50 2349
 Fax: +81 298 58 2645
 E-mail: grid@nies.go.jp

GRID-Warsaw (Poland)
 Environmental Information Centre
 ul. Merliniego 9
 02-511 Warszawa 12, POLAND
 Tel: +48 22 6274623
 Tel/Fax: +48 22 488561
 E-mail: gridw@plearn.edu.pl

GRID
 Arendal

Longum Park, P.O. Box 1602, Myrene, 4801 Arendal, NORWAY
 Tel: +47 37 03 5650, Fax: +47 37 03 5050
 E-mail: grid@grida.no, <http://www.grida.no/>

GRID-Arendal, Stockholm Office
 c/o Dept. of Systems Ecology, Stockholm University, S-106 91 Stockholm, SWEDEN
 Tel: +46 8 16 17 37, Fax: +46 8 15 84 17, E-mail: sindre.langaas@grida.no
<http://www.grida.no/>