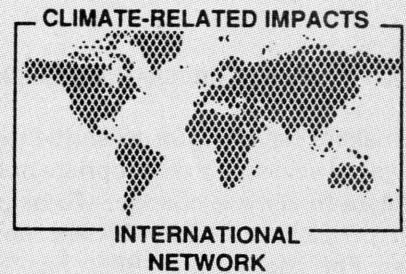


NETWORK NEWSLETTER



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Editorial

Who Watches the World's Environment?

The United Nations Environment Programme (UNEP), based in Nairobi, Kenya, is in deep trouble. Its funding has been greatly reduced by the United States and other governments throughout the world.

In the absence of a global watchdog for the environment, what organization is capable of mustering enough political clout to get nations to pay attention to common environmental concerns? Without a UNEP, would there have been a climate convention to deal with global warming? Would there have been a convention to end the use of ozone-depleting chemicals? UNEP was the first agency to form a coordinating committee to monitor ozone depletion around the world in the late 1970s. The attempt to halt the process of desertification (the creation of desert-like landscapes where none had existed in recent times) is yet another area of success for UNEP, in the sense that it drew attention to this creeping environmental degradation faced in a variety of ways by almost all countries around the globe.

While UNEP cannot take credit for all actions at the global level to save the environment, it should get a good share of it. The work done and the morale of UNEP's workers reflect the ethics and interests of the particular person heading UNEP. Since its creation in 1972 at the UN Conference on the Human Environment in Stockholm, there have only been three Executive Directors: Maurice Strong, Mustafa Tolba, and Elizabeth Dowdeswell. Dowdeswell was put in charge to clean up the system; instead, she paralyzed it with even more bureaucratic tasks. She has just resigned amidst charges that the organization has been ineffective. But is it her fault or the fault of the governments that elected her to that position for political reasons and not for her administrative talents?

Is it time to start opening up the UN system to leaders of industry who have efficiently and effectively managed companies with budgets larger than UNEP's? How about finding a Lee Iacocca or a Ted Turner or some other corporate mogul who has the ability to run the

organization, is concerned about the environment, is committed to protecting what's left of the global environment, and who knows how to generate funding at a time when money seems to be disappearing for essential tasks such as environmental protection?

What happens if UNEP disappears? Organizations with poor track records on dealing with environmental issues and which are under pressure from those who want to exploit their resources (such as the World Bank) will step in. UNEP is currently being reduced to a shadow of its former self by severe budget cuts. It could be dismantled completely. We should not let this happen. We should call on national governments to look beyond their own narrow political interests and establish a UNEP that is not subject to the petty international politics of the day but, instead, can operate with autonomy. An autonomous organization could monitor environments everywhere and alert governments and the global public about environmental practices and changes that have the potential to harm us all. One example is the rapid cutting down of the rainforest in tropical Africa.

Companies from Europe and Asia (regions that have denuded their own forested areas) are now focused on Africa, which is in dire need of cash. For a proverbial few dollars, African countries are encouraged to chop down their precious rainforests.

We can sit at home in Boulder or New York or LA and shake our heads at such wanton practices, BUT where is that tropical hardwood going? To North America and to Europe. Where is the tropical wood from Southeast Asia going? To customers in other developing countries? It is going to Japan and to Europe. An old Pogo cartoon comes to mind regarding this destruction -- the one that says, "We have met the enemy, and he is us."

The world needs a UNEP. What will it take to fund it at a size that makes sense, so it can do its job effectively (assuming that governments really want it to do so)? Governments have to pick the right Executive Director and then stand back. Instead, they seem to be trying to destroy it by raising issue of bureaucratic corruption or inefficiency (which, by the way, happens to plague their own governments as well).

--Michael H. Glantz



United Nations
Environment Programme



Environmental and Societal
Impacts Group

National Center for Atmospheric Research (NCAR) P.O. Box 3000, Boulder, CO 80307-3000
The National Center for Atmospheric Research is sponsored by the National Science Foundation



recycled paper

RFF LAUNCHES PROGRAM ON CLIMATE CHANGE

Policymakers have begun to shift their attention from the physical sciences to appropriate policy responses as they relate to climate change. To help decisionmakers design policies that are efficient and effective, Resources For the Future (RFF) has launched a new program to introduce economic principles into the long-term debate as well as into the specifics surrounding negotiations under the UN Framework Convention on Climate Change (UNFCCC). This program is designed to integrate the many different aspects of climate change with ongoing basic and applied research involving energy markets, water and forest resource management, air pollution, and sustainable development. Principal areas of investigation include economic and environmental consequences of climate change; domestic and international policy design issues; interactions between climate change and other policies; equity, efficiency, and other criteria used in decisionmaking; and development of analytical tools. The program will involve basic and applied research, policy analysis, and dissemination of the results to the public. For more information, contact: Michael Tebo, Resources for the Future, 1616 P St., N.W., Washington, DC 20036-1400 USA. Tel: 202-328-5000; fax: 202-939-3460; e-mail: info@rff.org -- web: <http://www.rff.org> (from *Resources*).

NEW ZEALAND MARINE STUDIES CENTER

The New Zealand Marine Studies Centre is being established by the University of Otago in Dunedin, New Zealand. This new Centre aims to incorporate with the Trust Bank Aquarium and the Marine Public Education Programme and link closely with the Department of Marine Science. The Centre will be offering a wide variety of marine courses, including: university short courses; workshops for scientists, teachers, etc.; holiday activities; and school programs. The Centre is very interested in developing courses for special interest groups or working with other organizations and tour operators to offer joint programs. For more information, contact: Programme Director, New Zealand Marine Studies Centre, University of Otago, PO Box 8, Portobello, Dunedin, New Zealand. Tel: 64-3-478-1826; fax: 64-3-478-1825; e-mail: marine-studies@otago.ac.nz (from *The Globe*)

CASPIAN SEA LEVELS: EXPLAINING THE CHANGES

The recent rise of the Caspian Sea level shows climatic peculiarities that point to a human influence on large-scale climate patterns. It is not yet possible, however, to clearly separate natural causes from human ones. The Caspian Sea catchment is a sensitive indicator of

climate variability, human action within the basin, and possible global climate change. On the other hand, the Caspian Sea is small enough to undergo drastic variations of level that affect the economies of the surrounding lowlands. Research by Russian Federation scientists has linked Caspian Sea level changes to longer-term circulation patterns connected mainly with the North Atlantic Oscillation; this research has also ruled out simple dependencies on sunspots or the temperature in the Moscow region as possible predictors of level changes. For more information, contact: Dr. Hartmut Grassl, WCRP, WMO, 1211 Geneva, Switzerland; e-mail: grassl@wcrp2.wmo.ch -- or contact: Dr. G.S. Golitsyn, Institute of Atmospheric Physics, 3 Pyzh-evsky, Moscow 109017, Russian Federation. (From *World Climate News*)

Let's hear from you! This newsletter depends on YOUR input. Please send relevant information that comes across your desk, whether it is a news item, meeting, job opening, or publication, to the address on the back cover. Information to be included in the next newsletter must be received before 1 July 1997.

MASS EMERGENCIES PROJECT ESTABLISHED

Israel's Bar-Ilan University Mass Emergencies Project (MEP) was founded in 1989 to examine emergency impacts on communities in Israel and around the world. MEP supports a broad, generic, all-hazards definition of emergency and disaster and examines human problems on all levels -- individual, family, organizational, and society at large. Based in the University's School of Social Work, MEP promotes effective, measured intervention by mental health and welfare organizations and individuals. MEP emphasizes inherent individual capacity to cope with adversity, along with community-based planning and management of response to human needs in emergencies. The project focuses on applied research and training and offers courses, workshops, conferences, and other instruction covering a broad spectrum of crisis and emergency management issues. For more information, contact: Hayim Granot, Director, Mass Emergencies Project, School of Social Work, Bar-Ilan University, Ramat Gan 52900, Israel. Fax: 927-3-5347228; e-mail: granot@ashur.cc.biu.ac.il

**THE COMMITTEE FOR THE NATIONAL INSTITUTE
FOR THE ENVIRONMENT (CNIE): PROGRESS REPORT**

The CNIE has brought together scientists, educators, business and civic leaders, environmentalists and policymakers to advance a common agenda -- improving the scientific basis for environmental decisionmaking. The result of their work is a proposal for a nonregulatory, independent National Institute for the Environment. This would be the first federal institution based on principles of stakeholder governance combined with a unique, integrated approach to science. Legislation to establish the NIE has not passed through Congress as yet, but the impact of the NIE Initiative has already been significant. To receive Progress Reports on the NIE Initiative, send a fax number or an e-mail address to: The Committee for the National Institute for the Environment, 1725 K St., N.W., Suite 212, Washington, DC 20006-1401 USA. Tel: 202-530-5810. You can also visit their website at <http://www.cnie.org/nle>

RENEWABLE ENERGY POLICY

The Renewable Energy Policy Project (REPP) has two new issue briefs available. The first, **Dying Needlessly: Sickness and Death Due to Energy-Related Air Pollution**, written by Curtis A. Moore, Director of International Programs for the American Lung Association and a former Counsel to the Senate Committee on Environmental and Public Works. He describes six major air pollutants regulated by the US Environmental Protection Agency (USEPA), many of which result from the combustion of fossil fuels. He then summarizes emerging medical evidence indicating that currently established legal levels of pollution may cause sickness and even death. Mr. Moore also discusses USEPA's recent proposals for more rigorous air quality standards and the potential of renewable energy technologies to help meet these standards.

The second brief, **Clean Hydrogen Transportation: A Market Opportunity For Renewable Energy**, was written by James Cannon, President of Energy Futures, an energy and environmental consulting firm based in Colorado. His paper examines an exciting market opportunity that will help advocates of renewable energy technologies develop market-entry strategies to move the world more rapidly toward a sustainable energy economy, e.g., renewables-based hydrogen vehicles. To receive more information on either of these publications, contact the Editor, Susan Conbere, at 301-405-4550 or by e-mail at sconbere@bss2.umd.edu -- or you may access the issue briefs on the Internet at <http://solstice.crest.org/renewables/repp/>

JEROME NAMAIS, WEATHER FORECAST EXPERT

Jerome Namais, a well-known meteorologist who pioneered extended-range weather forecasts in the United States, died at age 86 on 10 February 1997 in San Diego. In a career that spanned more than five decades, Namais participated in many important advances in the understanding of climate. Dr. Edward Lorenz, Professor Emeritus of Meteorology at the Massachusetts Institute of Technology, said that the principal contributions of Namais were in the area of long-range forecasts. He pioneered the forecasting of weather for periods of weeks and seasons, largely by the recognition of different weather patterns. He wrote more than 200 papers and was the author of several books. He was elected to the National Academy of Sciences and the American Academy of Arts and Sciences and received numerous other awards.

LA NIÑA AND CANADIAN WINTERS

Physical events in one part of the world can and do cause or influence weather-related phenomena in others. Such is the case with La Niña and its effect on Western Canada. During La Niña (cold) events, eastern Pacific surface waters are relatively cold, while during El Niño (warm) events, they are relatively warm. These oceanic conditions interact with the atmosphere over a period of a year or more, causing changes in oceanic upwelling and sea surface temperatures that directly influence the magnitude of widespread tropical thunderstorms. The convection or thunderstorms in the tropics that result from La Niña events create structural adjustments in the atmosphere that result in a circulation response over Canada. This response has resulted in empirical and statistical relationships that can be used to predict upcoming seasonal conditions. Seasonal climate predictions are available to members of the Canadian Institute for Climate Studies or by subscription to the Seasonal Climate Bulletin. For more information, contact: Rick Lee, The Climate Network, 130 Saunders Annex, University of Victoria, Victoria, B.C. V8W 2Y2, Canada. Tel: 250-721-8800; fax: 250-721-7217; e-mail: rjlee@uvic.ca -- web: <http://www.cics.uvic.ca> (from *The Climate Network*)

THE MEDIA AND CLIMATE CHANGE

The increasing consensus over the past few years among scientists and policymakers about the need to take action to respond to the possibility of a global climate change has not generated widespread concern among the general public. After an initial interest with climate change issues, news editors have been largely uninterested in stories of climate change. This situation may result, in part, from the absence of good lines of communication between senior media decisionmakers and the climate change research community. Further, the media's tendency to focus on relatively dramatic "news" has proven to be an obstacle to discussion of the relatively slow pace of science and policy processes. A series of meetings to address this issue is being organized between April and July 1997 by Jo Smith of Cambridge University and Roger Harrabin, Environment Correspondent of BBC Radio 4's Today Programme. For more information, contact: Dr. Jo Smith, Committee for Interdisciplinary Environmental Studies, 62 Sidney St., Cambridge, CB2 3JW, UK. Tel: 44-1223-333366; e-mail: jhs15@cam.ac.uk (from GEC-O).

BERNARD VONNEGUT, EXPERT IN METEOROLOGICAL PHENOMENA

Bernard Vonnegut, distinguished professor emeritus of atmospheric sciences at the State University of New York at Albany, died at age 82 on 25 April 1997 in Albany. Vonnegut's expertise in meteorological phenomena (lightning bolts, tornadoes, updrafts and downdrafts in thunderstorms) was extensive. He developed and explored theories about the role electrical charges play in the formation of precipitation as well as in tornadoes. Along with fellow General Electric Research Laboratory employee Vincent Schaefer, Vonnegut helped to discover the technique of cloud seeding in the 1940s. The method they discovered (seeding clouds with silver iodide) has not been improved upon in the decades since and is still used to control droughts in the US and around the world. Vonnegut is survived by his brother, novelist Kurt Vonnegut, five sons, and five grandchildren.

BERLIN MANDATE TALKS ENTER THE NEGOTIATING PHASE

The Ad hoc Group on the Berlin Mandate (AGBM) is crafting a "protocol or other legal instrument" that will strengthen the commitments of developed countries and

establish how they are to reduce their greenhouse gas emissions after the year 2000; it will be adopted by the Conference of the Parties (COP) in Kyoto, Japan in December 1997. The AGBM's fifth session was held in Geneva in December and marked the transition from the first phase of analysis and assessment to the second and final phase of negotiation. The various meetings were attended by some 520 delegates from 136 countries. Some key issues brought to the forefront included: timetables and targets for emissions reductions; coordinated vs. flexible policies; common vs. differentiated commitments; and implications for developing countries. The proposals are being incorporated into a single "framework compilation," which will greatly facilitate the negotiating process when it resumes next March in Bonn. It seems unlikely that all of the proposals now on the table can be worked out in detail in the time remaining; thus, unfinished discussion on how to implement developed-country commitments could form the basis for continuing negotiations in 1998. (from *Climate Change Bulletin*)

REGIONALIZING CLIMATE CHANGE

There is a growing gap in the understanding and predictive capability of climate change between the global and regional scales. The Second Assessment Report (SAR) of the Intergovernmental Panel on Climate Change (IPCC) hints at the fact that time spent to reach an international consensus on global climate change science is at the expense of studies that explore, explain, and exploit regional differences rather than synthesizing that regional knowledge. Concentrating on the global problem, however, ignores important regional aspects. For instance, from a Pacific island perspective, dangerous anthropogenic interference is already occurring in the climate system; it appears that, in the absence of reliable regional- and national-scale information, uncritical and imprudent use is commonly made of generalized scientific appraisals, impact assessments, and response options that are applicable only at the global scale. John E. Hay of the University of Auckland (New Zealand) maintains that the uncertainties surrounding climate change and enhanced responsive capacities require greater emphasis on regional rather than local or global studies and action. The IPCC also acknowledges this point and has begun giving greater regional focus to its diagnostic, modelling, assessment, and policy development studies. For more information, contact: Professor John E. Hay, School of Environmental and Marine Sciences, University of Auckland, PB 92019, Auckland, New Zealand. Fax: 64-9-3737011; e-mail: je.hay@auckland.ac.nz (From *Tiempo*).

21ST CLIMATE DIAGNOSTICS AND PREDICTION WORKSHOP

Once a year, researchers and operational climate analysts meet to exchange ideas and review results of recent work focused on the climate system. This year's workshop focused on seasonal climate predictions. It was an opportunity to revisit the knowledge surrounding seasonal climate prediction techniques used around the world. Broad categories of presentation were: (1) prediction of climate on a seasonal time scale; (2) interannual and interdecadal variability; (3) modulation of high-frequency variability by climate-scale phenomena; (4) use of satellite data in climate monitoring and diagnostics; (5) application of global models for the new NWS Week Two forecast and monthly Climate Outlook; and (6) experimental long-lead climate predictions. Many issues and achievements were noted, including the impact that data sets can have on research and how their length is important in detecting climatic signals. For a summary of the findings, see the Fall 1996 issue of *The Climate Network*, 130 Saunders Annex, University of Victoria, Victoria, BC, V8W 2Y2, Canada. Tel: 250-472-4291; fax: 250-721-7217; e-mail: rjlee@uvic.ca

INSURANCE FIRMS ACTIVE ON CLIMATE CHANGE

A leading group of international insurers has started to tackle risks caused by environmental change by joining together as the UNEP Insurance Industry Initiative on the Environment. Natural disasters represent 85% of all insured losses. More than 50% of the losses from natural disasters over the past 40 years have occurred since 1990, with causes including windstorms, floods, and mudslides. In addition to property losses, the health affects resulting from such disasters can also lead to significant losses for the insurance industry. The IPCC's conclusion that mean global temperature is likely to rise by 1 to 3.5°C by the end of the next century indicates a potentially higher risk of extreme events due to climate change and either higher insurance premiums or insurance that is unavailable or highly restricted in some areas. If unexpectedly severe events start bankrupting insurance companies, then other economic sectors such as banking and public finances could feel the ripple effects. Thus, over 60 insurers from 23 countries have decided to combine under the aegis of UNEP to constitute this UNEP Insurance Industry Initiative. The Initiative gives the industry its own voice on climate change and other important global environmental issues. All insurance companies (life, health, property, etc.) are invited to participate. For more information, contact: UNEP, Environment, Trade, and Investment Unit, Geneva Executive Center, C.P. 356, CH-1219 Geneva, Switzerland. Fax: 41-22-7969240. (from *Climate Change Bulletin*)

THE GLOBAL CLIMATE OBSERVING SYSTEM (GCOS)

Governments and international agencies have concluded that their concerns for detecting and understanding climate change are being restricted by the lack of observations of the global climate system. This task requires a large suite of parameters, including detailed observations of the oceans, land, and atmosphere. The Global Climate Observing System (GCOS) was established to meet the observational needs for: climate system monitoring; climate change detection and response; monitoring, especially terrestrial ecosystems; data for application to national economic development; and research toward improved understanding, modeling, and predicting the behavior of the climate system. GCOS will be closely coordinated with existing and developing programs and will make recommendations on system improvements and implementations. Planning for the development and implementation of GCOS is being handled by a Joint Scientific and Technical Committee (JSTC), whose key concern will be ensuring that satellite platforms are planned with GCOS requirements in mind. The program is encouraging because of the immense sense of worldwide collaboration amongst scientists and engineers from different fields and disciplines. For more information on GCOS, visit the website at <http://www.wmo.ch/web/gcos/gcoshome.html>

NEW GLOBAL CHANGE LABORATORY INTEGRATES TEACHING AND RESEARCH

The National Science Foundation (NSF) and the University of Michigan are jointly sponsoring a new instructional and experimental initiative in global change research called Global Change Laboratory (GCL). This interdisciplinary teaching and research laboratory will conduct research activities which cover a broad range of topics that have the unifying theme of the long-term observation of natural and anthropogenically induced variability in the atmosphere. To integrate the research with educational opportunities, all GCL equipment will be incorporated into formal course work for hands-on experience in state-of-the-art, experimental global change research. GCL will also develop a long-term database of its findings to provide a cross-sectional and interdisciplinary record of the changing environment. All new instruments will be computer-controlled and will utilize a common data system. For more information, contact: Global Change Project, Room 1572 Dana Bldg., University of Michigan, Ann Arbor, MI 48109-1115. Tel: 313-764-2109. (from *Global Change*)

**NATIONAL ACTION PLAN ON CLIMATE CHANGE:
IMPROVING SCIENTIFIC KNOWLEDGE**

Canada's National Action Program on Climate Change was tabled at the first meeting of the Conference of the Parties to the Framework Convention on Climate Change in 1995. The program was aimed at meeting Canada's commitments in the field of climate change mitigation, adaptation, research, education, and international cooperation. The Canadian Institute for Climate Studies (CICS) was commissioned by the Research Committee of the Canadian Climate Program Board to undertake a review of the progress being made to improve scientific knowledge on climate change. The primary scientific goals the CICS has set are: (1) improve research networks of scientists to better understand climate and related ecological processes; (2) improve evaluation and coordination of systematic observations of a broad range of related interdisciplinary parameters; (3) enhance statistical and analytical tools to better understand causes of fluctuations and changes in Canada's climate; and (4) develop appropriate tools to assess Canadian options and opportunities aimed at reducing the risks of climate change. The achievements of the Program are too numerous to note, but progress is being made in all areas. For more information or for a copy of the report, "A Review of Canadian Progress on Its National Action Program on Climate Change: Improving Scientific Knowledge," contact: The Climate Network, 130 Saunders Annex, University of Victoria, Victoria, B.C. V8W 2Y2, Canada. Tel: 250-472-4291; fax: 250-721-7217; e-mail: rjlee@uvic.ca -- web: <http://www.cics.uvic.ca> (from *The Climate Network*).

JOB, FELLOWSHIP, AND GRANT OPPORTUNITIES

The Royal Society-Esso Science-Education Partnership Grants (UK). These partnership grants are designed to encourage ideas for activities from teachers and scientists/engineers that enable school children of any age to experience something of the nature, processes, and excitement of science, engineering, and technology and the benefits that they bring to society. Grants in the amount of £250 - £1500 are available to support activities and initiatives aimed at promoting scientific research in schools. The activities can be one-time events or continuing projects. Proposals must include genuine pupil involvement and must clearly define the benefits for those involved. The deadline for receipt of applications is 30 April 1997. For more information, write to Science Promotion Section (GMF), Royal Society, 6 Carlton House Terrace, London SW1Y 5AG, UK. Tel: 44-171-4512582.

The Operation Crossroads Rainforest Conservation Program is looking for summer interns, volunteers,

project directors, and group leaders. The Program operates in rural and urban settings throughout 18 countries in Africa, plus Brazil. The Program runs from 16 June through 12 August 1997 and starts with a training orientation in New York City. Multidisciplinary projects, research, work camps, and field study include: ecology and environment, traditional medicine, archaeology, anthropology, reforestation, wildlife, human rights, and many others. For more information, contact: Operation Crossroads Rainforest Conservation Program, 475 Riverside Dr., Suite 1366, New York, NY 10027 USA. Tel: 212-870-2106; e-mail: RainForestS@Juno.com

CARE is looking for a Project Coordinator (PC) for the Masoala Integrated Conservation and Development Project in Masoala, Madagascar. The PC will be responsible for the implementation of the project, which is designed to promote adequate social and economic development initiatives. The project would permit the creation and maintenance of a well-managed, biologically and economically viable system of terrestrial and marine parks, along with the suitable use of forest and marine ecosystems. Qualifications include: fluency in French; extensive project management experience; the ability to develop a long-term view and strategies for development activities; and an M.Sc. in agriculture, natural resource management, environmental sciences, rural development, or related subject. Send resumes to Rachael Cogen, c/o CARE, 151 Ellis St., Atlanta, GA 30303 USA.

CALL FOR ABSTRACTS AND PROPOSALS

The 1998 **Seventh International Symposium on Society and Resource Management** is accepting abstracts and proposals, due *15 November 1997*. The symposium is sponsored by the University of Missouri-Columbia and will be held there from *27-31 May 1998*. This biennial symposium focuses on the contributions of the social sciences and humanities to a better understanding of the environment and resource management. Understanding links between culture, environment, and society will be a guiding theme at the 1998 event, but any presentations bringing social science perspectives to resource and environmental issues will be welcomed. The symposium will include paper and poster sessions, panel and roundtable discussions, film/video sessions, and various field trips. For more information, contact: Sandy Rikoon, ISSRM Co-Chair, University of Missouri-Columbia, Rural Sociology, Sociology Building 333, Columbia, MO 65211 USA. Tel: 573-882-0861; fax: 573-882-1473; e-mail: srsrsjr@muccmail.missouri.edu

The European Commission's Environment and Climate Programme has issued a call for proposals for research,

technological development, and demonstration actions. The themes are included within the programme: (1) research into the natural environment, environmental quality, and global change; (2) environmental technologies; (3) space techniques applied to environmental monitoring and research; and (4) human dimensions of environmental change. The Commission intends to support advanced study courses for young scientists and graduate students. Courses must fall into disciplines of main interest to the Environment and Climate Programme or the MAST (Marine Science and Technology) Programme. For more information, contact: DG XII - Science, Research and Development or DG XII/D-3, MAST Programme, European Commission, SDME/7/80, 200 rue de la Loi, B-1049 Brussels, Belgium. Fax: 32-2-2963024.

COMPUTERS/NETWORKING

The **National Centers for Environmental Prediction (NCEP)**, recognizing both the need for improved dynamical models to make possible better climate forecasts and the limited computing capability available to the developers of such models, is providing its computing facility to enhance the national effort in such development. Applications should be approximately one page in length and should contain: (1) a brief description of the peer-reviewed research proposal to which the work will contribute; (2) a description of the nature and resource requirements of the computer work to be performed; and (3) a statement of the relevance to the seasonal-to-interannual climate prediction problem. Send applications or requests for more information to Meg Austin, Director, UCAR Visiting Scientist Programs, PO Box 3000, Boulder, CO 80307-3000 USA. Tel: 303-497-8630; fax: 303-497-8668; e-mail: austin@ucar.edu

DIRECTORY OF ENVIRONMENTAL PROGRAMS NOW AVAILABLE ON THE WEB

The Committee for the NIE (National Institute for the Environment) has recently made available its "Directory of Higher Education Environmental Programs (DHEEP)," a World Wide Web directory of undergraduate and graduate programs representing the full spectrum of environmental disciplines. The directory contains detailed information for nearly 60 programs that will serve students searching for environmental education opportunities, faculty working to establish or improve programs, and employers seeking employees with appropriate training. The Directory is a free resource for those seeking such information. DHEEP can be accessed through the CNIE's home page at <http://www.cnie.org>.

CAREER INFORMATION FOR FUTURE SCIENTISTS NOW ON THE WEB

The American Association for the Advancement of Science (AAAS) has launched a new Web project, which is now available as a convenient source of information for persons pursuing scientific careers. "Science's Next Wave" can be found at <http://www.nextwave.org> and includes listings of innovative careers for scientists, a monthly Web column on career advice, a series of open discussion fora, a news department featuring stories and newsbriefs that are updated twice a week, and a one-stop shopping center for all science career information that exists on the World Wide Web. It is hoped that this site will provide young scientists with the information necessary to establish satisfying, secure, and productive science careers. Questions and comments can be addressed to John Benditt at jbenditt@aaas.org

NEWSLETTERS AND JOURNALS

The **Community Development Journal** is published four times a year and circulates in over 80 countries. The Journal covers political, economic, and social programs that link the activities of people with institutions and government. Issues covered include: community action; village, town, and regional planning; community studies; and rural development. The Journal occasionally sponsors conferences and seminars on relevant topics. Inquiries regarding subscriptions may be mailed to: Journals Marketing, Oxford University Press, Great Clarendon St., Oxford OX2 6DP, UK. Tel: 44-1865-267907; fax: 44-1865-267485. In North America, Journals Marketing, Oxford University Press, 2001 Evans Rd., Cary, NC 27513 USA. Tel: 800-852-7323 or 919-677-0977; Fax: 919-677-1714; E-mail: jnlorders@oup.co.uk

Down To Earth, a newsletter of the Convention to Combat Desertification (CCD), is published quarterly in English and French. It covers developments regarding the CCD, which entered into force on 26 December 1996 and which takes its place with sister conventions on climate change and biodiversity as pillars of the Rio process. To subscribe to the newsletter or to obtain other CCD materials (e.g., CCD kit, Down to Earth guide to the CCD), contact: UNCCD Interim Secretariat, Geneva Executive Center, 11/13, Chemin des Anémones, 1219 Châtelaine, Geneva, Switzerland. Fax: 41-22-979-90-30/1; e-mail: Secretariat.incd@unep.ch

The **Risk Policy Report** is published monthly by the U.S. Environmental Protection Agency (USEPA) and is dedicated to providing coverage of the newest develop-

ments in risk policy, assessment, and management throughout the world. Included in the report are profiles, guest perspectives, analyses, breaking stories, and policies in the making. To subscribe, contact: Risk Policy Report, PO Box 7167, Washington, DC 20044 USA. Tel: 800-424-9068; fax: 703-416-8543; e-mail: service@iwpnnews.com

The **WCRP Newsletter**, launched in October 1996, is published quarterly by the World Climate Research Programme (WCRP) and is dedicated to providing timely information on the activities of the programme as a whole to an international audience of governmental officials, scientists, research administrators, and policy-makers in the area of climate research and related aspects of global and environmental change. It intends to describe matters of general interest and to promote recognition of the WCRP as a unique and effective mechanism for the international coordination of global climate research. To subscribe, contact: Joint Planning Staff for WCRP, c/o World Meteorological Organization, 41 Ave. Giuseppe Motta, CH-1211 Geneva 2, Switzerland. Tel: 41-22-730-8246; fax: 41-22-734-0357; e-mail: jps@scrp2.wmo.ch

SUMMARIES OF PAST MEETINGS

The **Fourth High Level Seminar on Cleaner Production** was held in Oxford, UK from 23-26 September 1996. Organized by UNEP's Industry and Environment Unit and hosted by the Government of the United Kingdom, this seminar was attended by approximately 170 participants from over 50 countries covering various sectors involved in the Cleaner Production network. Specific objectives of the Oxford Seminar were to review and evaluate the progress of worldwide cleaner production initiatives, to assess obstacles as well as opportunities for further development, and to recommend future orientations for the Cleaner Production Programme. Plenary sessions covered five main issues: cleaner production; innovation for sustainable production and consumption; instruments for promoting cleaner production; beyond demonstration; new horizons in sustainable production and consumption; and creating new partnerships. A detailed report on the seminar may be found in July-September 1996 issue of *UNEP Industry and Environment*. For more information, contact: UNEP Industry and Environment, 39-43, quai Andre Citroën, 73739 Paris Cedex 15 - France. Tel: 33-1-44-37-14-50; fax: 33-1-44-37-14-74; e-mail: unepie@unep.fr

A **Forum for Integrating Multidisciplinary Research to Advance the Science of Global Change** was held 26 October 1996 in Oak Ridge, Tennessee. This Conference marked the conclusion of the U.S. Department of Energy's Global Change Fellowship Program, which was

designed to gather input from the Fellows about their views on the future of global change research. Sessions on global change research topics were held, including: atmospheric chemistry, clouds, and radiation; ocean/atmosphere interactions and climate variability; integrated assessments, predictions, and policy; global carbon cycle; paleoclimatology and earth-systems processes; and ecological/environmental interactions. Panel members also discussed the need for better outreach efforts directed toward more immediate development and implementation of policies that address global change problems. For more information, contact: Charlene Fluder, Global Change Project, Room 1572, Dana Bldg., University of Michigan, Ann Arbor, MI 48109-1115 USA. Tel: 313-764-2109.

Resources for the Future (RFF) co-sponsored **Climate Change: Cataclysmic Risk and Fairness** with the International Institute for Applied Systems Analysis in Austria during the summer of 1996. The conference attracted experts from around the world to explore two issues: the potential for large-scale adverse effects from climate change in the future, and how policy-makers might respond with fairness to such risks across and within generations. Among topics discussed were the notion that individual values are formed by the social frameworks in which people live, and that attitudes about climate-change risks vary depending on the framing of the question and whether the proposed response is seen as fair. Most participants agreed that, because of such factors, analysts need to use caution when interpreting assessments of climate-change risks and responses. For more information, contact: Resources for the Future, 1616 P St., N.W., Washington, DC 20036-1400 USA. Tel: 202-328-5000; fax: 202-939-3460; e-mail: info@rff.org

The **World Food Summit** was held 13-17 November 1996 in Rome, Italy to provide a forum to address the need for global commitment and action to redress one of human society's most basic problems -- food insecurity -- and to renew the commitment of the world leaders to eradicate hunger and malnutrition. The World Meteorological Organization (WMO) contributed a fact sheet, "Climate and Food Security," which stressed that climate variability and change are already putting considerable stress on food production and availability. Suggestions to make food security more robust included: changes in the seasonal cropping calendar; adaptation of new crops to changing conditions; control and prevention of land degradation and desertification; and improved seasonal climate prediction. For more information, contact: The Secretary-General, World Meteorological Organization, Case postale 2300, 1211 Geneva 2, Switzerland. Tel: 41-22-730-81-11; fax: 41-22-734-23-26.

The first meeting of the **Mediterranean Commission of Sustainable Development (MCSD)**, held in Rabat, Morocco 16-18 December 1996, was a milestone for the Mediterranean in the post-Rio era. Representatives from 17 Mediterranean governments, 5 regional nongovernmental organizations, and numerous other organizations attended. The members of the MCSD examined a preliminary report on the main issues related to sustainable development in the Mediterranean region; they then appointed task managers and constituted thematic working groups to concentrate on specific subjects. Two of these groups will begin work immediately on the major priorities of sustainable management of coastal zones and management of water demand. After one year, they will propose the first strategic and policy orientations, which will be exploitable by all decision-makers, at all levels, in the region. For more information, contact: UNEP Coordinating Unit for the Mediterranean Action Plan (MAP), 48 Vassileos Konstantinou Ave., PO Box 18019, 116 10 Athens, Greece. Tel: 30-1-7253-190.

A **Workshop on the Social and Economic Impacts of Weather** was held 2-4 April 1997 in Boulder, Colorado. The workshop was jointly sponsored by the US Weather Research Program (USWRP), the American Meteorological Society (AMS), the Electric Power Research Institute (EPRI), the White House Subcommittee on Natural Disaster Reduction, the University Corporation for Atmospheric Research (UCAR), and the Environmental and Societal Impacts Group (ESIG) at NCAR. The workshop featured panels on Extreme Events (lightning, tornados, hail, extreme temperatures, floods, winter storms, and hurricanes); Sector Impacts (aviation, surface transportation, the hydrocarbon industry, agriculture, insurance, emergency management, electric power, and health); and Methodology (descriptive and prescriptive decision studies, natural hazards, micro-economics, risk analysis, and the value of information and survey techniques). A report is available on the Web at <http://www.dir.ucar.edu/esig/socasp/weather1/> OR through the WeatherZine at <http://www.ucar.edu/esig/socasp/zine/> -- proceedings are available from Roger Pielke, Jr. at ESIG/NCAR, PO Box 3000, Boulder, CO 80307-3000 USA. Tel: 303-497-8111; fax: 303-497-8125; e-mail: rogerp@ucar.edu

The **Second ATO Colloquium on the Promotion of Timber Industrialization in Africa** was held 16-18 April 1997 in Libreville, Gabon. The primary aim of the colloquium was to support the efforts of the African timber-producing countries in developing competitive means of processing timber in conjunction with promoting sustainable forest management. For further information, contact: African Timber Organization (A.T.O.), B.P. 1077, Libreville, Gabon. Tel: 241-73-29-28; fax: 241-73-40-30.

The Sustainable Energy Coalition, in cooperation with U.S. Congress members of the House Renewable Energy Caucus, sponsored the **House Renewable Energy Expo 1997** on 17 April 1997 in Washington, DC. Exhibits demonstrated a mix of renewable energy and energy-efficient technologies. For more information, contact: Ken Bossong, Sustainable Energy Coalition, 315 Circle Ave., #2, Tacoma Park, MD 20912 USA. Tel: 301-270-2258; fax: 301-891-2866.

ANNOUNCEMENTS OF UPCOMING MEETINGS

The **World Sustainable Energy Trade Fair** will be held in Amsterdam, Holland, *27-29 May 1997*. For more information, contact: Alex Mee, European Media Marketing Ltd., 6th Floor, 22-26 Albert Embankment, London SE1 7TJ, UK. Tel: 44-171-582-7278; fax: 44-171-793-8007; e-mail: sustain@emml.demon.co.uk

The **Eighth US National Conference on Wind Engineering** will be held in Baltimore, Maryland, *5-7 June 1997*. This conference is held every four years and provides a major forum for the discussion of recent developments in, and applications of, wind engineering. Virtually all aspects of the discipline will be addressed. For a complete conference announcement, contact: Nicholas P. Jones, Eighth US National Conference on Wind Engineering, Dept. of Civil Engineering, The Johns Hopkins University, Baltimore, MD 21218-2686 USA. Tel: 410-516-7874; fax: 410-516-7473; e-mail: 8usncwe@jhu.edu

The **International Climate Change Conference and Technologies Exhibition** is being held in Baltimore, Maryland USA from *12-13 June 1997*. The exhibits will feature efficient, environmentally friendly technologies and programs designed to address the climate change issue. For more information, contact: International Climate Change Conference & Technologies Exhibition, PO Box 236, Frederick, MD 21701 USA. Tel: 301-695-3762; fax: 301-695-0175.

The **Fourth International Conference on Water Pollution, Modelling, Measuring and Prediction** will be held in Bled, Slovenia, *18-20 June 1997*. For more information, contact: L. Kerr, Water Pollution 97, Conference Secretariat, Wessex Institute of Technology, Ashurst, Southampton SO40 7AA, UK. Tel: 44-1703-293223; fax: 44-1703-292853; e-mail: wit@wessex.witcml.as.uk

Water 97 - Transnational Issues, sponsored by the Centre for Petroleum and Mineral Law and Policy of the University of Dundee, will be held at Dundee, Scotland, UK *23-27 June 1997*. This international symposium will focus on current issues in water resource

development across several disciplines, including law, finance, natural sciences, and engineering. For more information, contact: Professor Thomas Walde, Executive Director, CPMLP, University of Dundee, Scotland, DD1 4HN, UK. Tel: 44-1382-344300; fax: 44-1382-322578; e-mail: cpmlp@dundee.ac.uk -- web: http://www.dundee.ac.uk/petroleumlaw

The International Conference on Environment and Development in Africa: An Agenda and Solutions for the 21st Century will be held in Midrand, South Africa, *29 June - 4 July 1997*. For more information, contact: Dr. K.I. Meiklejohn, SoSAG97 Conference Committee, Dept. of Geography, University of Pretoria, 0002 Pretoria, South Africa. Tel: 27-12-420-2489; fax: 27-12-420-3284; e-mail: ggy@scientia.up.ac.za

The Regional Training Course on Practical Application of Seasonal-to-Interannual Climate Prediction to Decisionmaking in Agriculture and Water Resources Management in Africa will be held from *30 June - 8 August 1997* in Niamey, Niger. The purpose of the course is to expose up to 20 professionals from the climate, hydrology, and agriculture communities of Africa to state-of-the-art climate monitoring and seasonal-to-interannual climate predictions, and to explore their practical application to decisionmaking in agriculture and water resources management. For further information, contact: Guillermo J. Berri, IRI, PO Box 1000, Palisades, NY 10964-8000, USA. Tel: 914-365-8765; fax: 914-365-8764; e-mail: berri@iri.ldeo.columbia.edu-- or contact: Mohammed S. Boulahya, ACMAD, BP 13184, Niamey, Niger. Tel: 227-72-31-60; fax: 227-72-36-27; e-mail: acmadem@intnet.ne

Earth-Ocean-Atmosphere: Forces for Change is being held in Melbourne, Australia, *1-9 July 1997*. The Conference is centered upon the challenge facing the world's scientific community to respond to pressure from public concerns to provide relevant information about and solutions to changes in the natural environment. For more information, contact: IAMAS/IAPSO Secretariat, Convention Network, 224 Rouse St., Port Melbourne, Victoria 3207, Australia. Tel: 61-3-9646-4122; fax: 61-3-96467737; e-mail: mscarlet@peg.apc.org

Coastal Zone 97 - Charting the Future of Coastal Zone Management: The Next 25 Years is being held on *20-26 July 1997* in Boston, Massachusetts. For further information on this conference, contact: Martin C. Miller, USAE Waterways Experiment Station, Attn: CEWES-CR-O, 3909 Halls Ferry Rd., Vicksburg, MS 39180 USA. Fax: 601-634-4314; e-mail: m.miller@cerc.wes.army.mil

The International Boreal Forest Research Association (IBFRA) is holding its 1997 conference on **Disturbance**

in Boreal Forest Ecosystems: Human Impacts and Natural Processes on *4-8 August 1997* in Duluth, Minnesota. Topics of interest include: changing land-use patterns; disturbance and forest health; interactions of regional and global climate and weather patterns at different scales; and changes in political economies, demographics, and social structure (alterations in the ability of boreal forests to provide for human needs). For more information, contact: Elizabeth F. Schmucker, USDA Forest Service--FFASR (1C-Aud), 201 14th St., SW, Washington, DC 20250 USA. Tel: 202-205-1561; fax: 202-205-2497; e-mail: ibfra97@worldweb.net

The Third SPREP Climate Change & Sea Level Rise Conference will be held *18-22 August 1997* in Noumea, New Caledonia; it is sponsored by France and organized by SPREP (South Pacific Regional Environment Programme) and ORSTOM (L'Institut Français de Recherche Scientifique pour le Développement en Coopération). Objectives of the Conference include: improving the understanding of regional Pacific Island governments about the implications of climate change; strengthening cooperation among relevant international organizations (e.g., IOC, UNESCO, WMO, UNEP, SPREP member countries); reviewing results of climate change activities relevant to the Pacific region (e.g., TOGA/COARE); reviewing results of relevant IPCC working groups; Limited funding assistance may be requested prior to *1 May 1997*. Presenters may submit an executive summary (no less than half an A4 page) prior to *30 June 1997*, with full paper by *31 July 1997*. For further information, contact: (1) Dr. Chalapan Kaluwin or Mr. Penehuro Lefale, SPREP, PO Box 240, Apia, Western Samoa. Tel: 685-21-929; fax: 685-20-231; e-mail: niawen@talofa.net OR sprep@talofa.net (2) Dr. Jacques Merle, Dr. Francois Jarrige, or Ms. Jacqueline Thomas, ORSTOM Secretariat, BP A5 Noumea Cedex, New Caledonia. Tel: 687-26-10-00; fax: 687-26-43-26; e-mail: merle@noumea.orstom.nc OR jarrige@noumea.orstom.nc OR thomas@noumea.orstom.nc

The WMO/ICSU/IOC Conference on the World Climate Research Programme (WCRP): Achievements, Benefits and Challenges will be held *26-28 August 1997* in Geneva, Switzerland. This conference will provide scientists, policymakers, and advisers with the opportunity to review the achievements of the WCRP and to set the climate science response and research priorities for the coming decades. For more information, contact: Joint Planning Staff, WCRP, c/o WMO, 1211 Geneva 2, Switzerland. Tel: 41-22-730-8494; fax: 41-22-734-0357; e-mail: wcrp_conf@gateway.wmo.ch

The International Geographic Union Regional Conference: The Atlantic - Past, Present, and Future will be held *30 August - 2 September 1997* in Lisbon, Portugal. This conference will cover issues with a worldwide dimension, including: human pressure on coastal

argins and coastal landscape; sustainable development; marine pollution; and global change. For more information, contact: Prof. Dra Carminda Cavaco, Centro de Estudos Geograficos (CEG), Faculdade de Letras, Alameda da Universidade, 1699 Lisboa Dodex, Portugal. Tel: 351-1-796-5469; fax: 351-1-793-8690; e-mail: ceg@mail.telepac.pt

The **5th Conference of Environmental Science and Technology** will be held *1-4 September 1997* in Molyvos, Lesvos. The conference will cover a number of subjects including, but not limited to: industrial pollution control and abatement; air pollution; solid waste management; methods and techniques in environmental research; environmental economics; ecological dynamics; environmental impacts; global change; and environmental policy. To obtain more information, contact: Professor Themistocles Lekkas, Conference Secretariat, 10 Aegean Str, GR 151 22, Maroussi, Greece. Tel/fax: 301-80-51-824.

The **Seventh European Environment Conference** is being held at the University of Leeds, UK on *16-17 September 1997*. This conference -- aimed at policymakers, NGOs, consultants, researchers, and academics -- is focused on improving environmental performance in a European context. Issues covered will include waste management; energy; transportation; air and water quality, integrated pollution control, environmental initiatives, the implementation of EU policy, and environmental liability. For more information, contact: The Conference Manager, ERP Environment, PO Box 75, Shipley, West Yorkshire, BD17 6EZ, UK. Tel: 44-1274-530408; fax: 44-1274-530409.

The Third International Conference in the series "Nonlinear World," **Ecological Education: Nonlinear Mentality**, is being held *22-27 September 1997* in Voronezh, Russia. Specific topics include: teaching ecology in schools and universities; social forms of communicating ecological knowledge; ecology and legislation; and nonlinear mentality as a methodological basis of environmental awareness. The scientific program will include oral presentations and poster sessions. The program committee address is: Prof. Galina Riznichenko, Dept. of Biophysics, Biological Faculty, Moscow State University, Vorobiev Gory, Moscow, 119899, Russia. Tel: 7-095-9391963; fax: 7-095-9391115; e-mail: nw@mars.biophys.msu.ru -- more information can also be found on the Web at <http://www.vorstu.ac.ru/engl/>

The third conference in the LOICZ Open Science Meeting Series, entitled **Global Change Science in the Coastal Zone**, is being held in Noordwijkerhout, The Netherlands from *10-13 October 1997*. This conference is intended to identify methods for integrating science into models utilized for global climate change

analysis. Topics include: integration of socioeconomic and natural sciences; biogeochemical studies; and fluxes of water and materials across the continental shelf. For details, contact: LOICZ Core Project Office, Netherlands Institute for Sea Research, PO Box 59, 1790 AB Den Burg-Texel, The Netherlands. Fax: 31-222-369430; e-mail: loicz@noiz.nl

ECOSUD 97: Ecosystems and Sustainable Development will be held *14-16 October 1997* at the Castle of Peñíscola, Spain. For more information, contact: Liz Kerr, ECOSUD 97, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK. Fax: 44-1703-292853; e-mail: liz@wessex.witcml.ac.uk

An international conference entitled **Urban, Regional, Environmental Planning and Informatics to Planning in an Era of Transition?** will be held in Athens, Greece on *22-24 October 1997*. The different points of view of environmental planners and the effects of their planning are considered in an era of social and economic transition. One of the primary goals of the conference is to identify the underlying forces shaping this transitional era. For more information, contact: Professor Dimitri Georgoulis, Dept. of Urban & Regional Planning, Faculty of Architecture, National Technical University of Athens, Zographou 157 73, Athens, Greece. Tel: 30-1-772-1591; fax: 30-1-772-1587; e-mail: dimi@ulpn.ntua.gr -- web: <http://www.upln.arch.ntua.gr/>

A Symposium on Climate Variability, Climate Change, and Water Resource Management will be held *26-29 October 1997* in Colorado Springs, Colorado. Discussions will include: advances in weather forecasting; hydrologic modeling and water resource management; managing for multiple uses in light of changes in variability and climate; and demand management and water allocation. For more information, contact: Betty Neal, Hagler Bailly Services, Inc., PO Box 3524, Eagle, CO 81631 USA. Web: <http://civil.colorado.edu/climate>

An international conference on **Transformations of Middle Eastern Environments: Legacies and Lessons** is being held *30 October - 1 November 1997* at Yale University in New Haven, Connecticut. Proposed topics include: climate change; environmental movements; deforestation and desertification; pollution; issues of the marine environment; agrarian issues and development; environmental law and policy; and remote sensing as a research tool. Panel presentations on the above topics are planned. For further information, contact: Roger Kenna or Magnus Thorkell Bernhardsson. Tel: 203-432-6252; fax: 203-432-9381; e-mail: Roger.Kenna@Yale.edu or Magnus.Bernhardsson@Yale.edu

The **UN Framework Convention on Climate Change (UNFCCC): Third Conference of Parties** will be held in

Kyoto, Japan, from 1-12 December 1997. For information, contact: UNFCCC Secretariat, PO Box 260 124, D-53153, Bonn, Germany. Tel: 49-228-815-1000; fax: 49-228-815-1999; e-mail: secretariat@unfccc.de

An international conference on **Education and Training in Integrated Coastal Area Management (ICM): The Mediterranean Prospect** will be held 25-29 May 1998 in Genoa, Italy. The conference, convened by the International Centre for Coastal and Ocean Policy Studies (ICCOPS), is designed to be a contribution to the 1998 United Nations International Year of the Ocean. The conference will discuss the issues and prospects of implementing and diffusing education and training in ICM according to UN guidelines. The Mediterranean will be regarded as a leading case study to design patterns of international cooperation on the regional (multinational) scale. For more information, contact: 1998 Conference Secretariat, International Centre for Coastal and Ocean Policy Studies - ICCOPS, c/o The University of Genoa, Dept. POLIS, Stradone di S. Agostino 37, 16123 Genoa, Italy. Tel/fax: 39-10-209-5840; e-mail: iccops@polis.unige.it

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