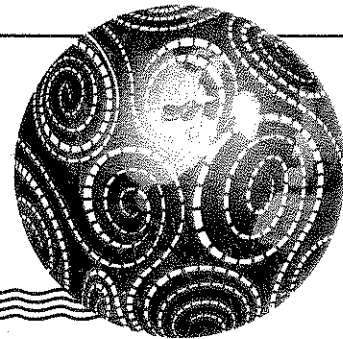


CLIMATE ALERT



Volume 4, Number 6

September-October 1991

Drought and Wars' Aftermath Spawn Refugees, Famine in Horn of Africa

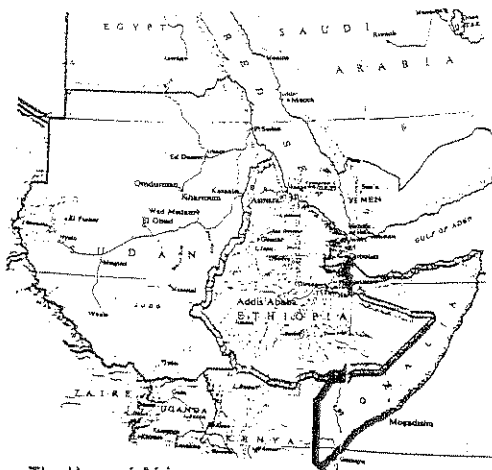
Repeated drought, civil wars and political instability have fomented huge cross currents of refugees in the Horn of Africa, and the threat of another massive famine hangs menacingly over the area. Some fighting among factions continues in the Sudan, Ethiopia and Somalia. The mass movements of people have been rapid, unpredictable and have strained the capacity of the international, governmental and private organizations assisting the victims of conflict and famine.

The problems are compounded by decreasing food production for local consumption, deforestation, soil erosion, desertification, over grazing, poor management of land and water resources, illiteracy, health difficulties, overcentralized and unrepresentative political systems. The area's dislocation and explosive population growth comes at a time when it needs rising agricultural and industrial output.

In July, the UN Secretary General established the Special Emergency Programme for the Horn of Africa (SEPHA). This group classifies 22.2 million of the 85 million in the region at risk, including two million refugees or returnees. Relief officials believe as many as 15 million people in Sudan, Ethiopia and Somalia face starvation this year unless emergency relief supplies can reach them. Sudan, with 9 million at risk, is considered in the worst situation.

According to testimony before a U. S. Senate Committee at the end of May, 300,000 are likely to die no matter what actions are taken. The human disaster is expected to exceed the drought in 1984-85 when one million Ethiopians died and in 1986 when 250,000 southern Sudanese perished from starvation and disease.

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The Horn of Africa

PrepCom 3, INC 3, Make Progress; Hard Work Ahead

The third meeting of the Preparatory Committee (PrepCom 3) for the United Nations Conference on Environment and Development (UNCED), to be held in Brazil in June 1992, was the first opportunity for substantive bargaining on development and environmental issues, and some delegates reported moderate satisfaction with the negotiations. However, a great deal of hard bargaining at the August 12 - September 4 meeting in Geneva — including work on 220 pages of proposed texts — was put off till PrepCom 4 next March in New York, arousing concern that there is not enough

Greenhouse Action Conference Adopts Broad Declaration

Australia was the first nation to announce a target of stabilization of greenhouse gas emissions by the year 2000 and reduction of 20 percent from 1988 levels by the year 2005. That was in October 1990. In a Greenhouse Action for the Nineties Conference in Melbourne, July 21-23, 1991, the Melbourne Greenhouse Action Declaration proposed to go even further. This conference statement recognized "that the stabilisation of greenhouse gas concentrations will require emissions reductions far beyond the Toronto targets" [of 20 percent reduction of CO₂ by the year 2005] and supported the principle that industrialized nations bear the responsibility to act first in restricting emissions.

Organized by Phil Noyce, a member of the Institute's Board as well as

(continued on page 4)

time left for adequate preparation for UNCED.

Two cross-cutting issues, financial resources and technology transfer, dominated discussions at PrepCom 3. There was no negotiation on financial resources — considered a critical issue — but it will be the first item on the agenda for the 5-week PrepCom 4 meeting in March. Donors don't want to commit funds till they know how they will be used. The developing countries are unwilling

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INSIDE

- Policy Implications of Greenhouse Warming: Report of the Adaptation Panel

Panel Asserts U.S. Can Adapt to Change at Moderate Cost

Other things being equal, the uncertainty of climate change scenarios reduces the rank of climate change as an issue, compared to "epidemics and drugs, shelter and food, art and arms," states an Adaptation Panel prepublication manuscript of the report, Policy Implications of Greenhouse Warming, dated August 23, 1991. The Adaptation Panel, along with the Mitigation and the Effects Panel whose findings are still to come, follows up on the report of a synthesis group, chaired by Daniel Evans, written up in the May 1991 Climate Alert. The National Academies of Sciences and Engineering and National Institute of Medicine have overall responsibility for the policy implications study.

The charge to the adaptation panel, writes Paul Waggoner, Distinguished Scientist of the Connecticut Agricultural Experiment Station and chairman of the panel, was to make an assessment of impacts and adaptation to climate change, emphasizing the consequences and opportunities for the U.S. The report focuses on the direct effects of greenhouse gases and climate change and does not attempt to assess all the numerous environmental changes that will take place at the same time, including for instance, loss of habitat, destruction of the ozone layer, and marine pollution. The panel, made up of experts in terrestrial and marine ecology, agriculture, forestry, population and migration, health, industry, civil engineering, geography, economics, technology, and international relations, saw its tasks as first to examine what would happen if climate changed and humanity and nature did not, and second to find ways to temper any harm and to enhance any benefits of a new climate.

Humans Adapt Readily

The capacity of humans to adapt is evident in the rapid technological, economic, and political changes of the past 90 years, the Adaptation Report points out. Buildings, machinery and equipment are on the average renewed in one to three decades. Through continuing normal investment, humanity's business activities have the potential to adapt to the types of changes predicted. The Ameri-

can farmers can keep up with the gradual climate change of the magnitude assumed by the panel. These assumptions were:

- an increase of greenhouse gases to 600 ppm near the middle of the next century, on the premise of increased population and economic activity;

- a warming of less than the model projections of 1 to 5 degrees C, because of lags;

- sea level rise of from 0 to 60 cm;

- precipitation of 10 percent more or less than now.

Water may limit adaptation, especially if society must go to the expense of transporting large quantities over long distances, the panelists affirmed. Particular species of plants and animals may not be able to adjust to climate changes rapidly enough to survive in a given location and ecosystems may disappear for a specific place. Moving ecosystems may be "hard or impossible," but plants and animals will always be found whether or not climate changes. However, they may not be the same communities and some species may become extinct, the report continues. As for humans, there have been climatic refugees before — during the Irish potato blight and the Dust Bowl, for instance — and there will be more in the future.

Adaptations do take money and the resources for investment in the necessary changes require "continuing ability to generate wealth," the report concedes. Not all changes are moderate and gradual, mild and predictable, members of the Synthesis Panel have observed. Surprises are very possible. The adaptationists recommend improving our ability to monitor climate and predict changes and impacts.

Drag from Less Resilient Nations

Although we cannot compute the probability of cataclysmic changes on the planet, large changes have taken place, the Adaptation panelists admit. New diseases and wars have caused calamitous centuries. Desperate masses on marginal farms have fled drought. Increasing populations in river flood plains

and low coastal areas have increased the vulnerability of some regions and nations. While the U.S. could by and large adapt, the misfortunes of others unable to do so "could substantially affect the United States and other industrial countries."

Major climate changes could overtax the capabilities especially of the poor countries. But "the probability and nature of such unexpected changes are unknown. Therefore, we cannot predict their impacts or devise adaptations to them," the report finds.

Opposition to 'Complacent Tone'

One panel member, Jane Lubchenco of the Department of Zoology, Oregon State University, dissented from "the complacent tone" of the report, disagreeing with its "implicit message that 'we can adapt with little or no problem.'" The report "does not adequately address the potential environmental and global consequences of the different adaptation strategies it recommends, nor does it adequately acknowledge that these consequences must be taken into consideration," she writes.



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Sir Crispin Tickell, *Chairman*
Stephen Leatherman, *Co-Chairman*
John C. Topping, Jr., *President*
Mark Goldberg, *Publications*
Chairman
Nancy C. Wilson, *Editor*

324 Fourth Street, NE
Washington, D.C. 20002

Phone: (202) 547-0104
FAX: (202) 547-0111

Climate Institute News

Tickell



Sir Crispin Tickell at Green College

"If ever there was a global problem, this is it," said Institute Board Chairman Sir Crispin Tickell in a speech, "Global Warming: A Major Foreign Policy Challenge," to a joint meeting of the World Affairs Council and the Commonwealth Club in San Francisco on August 8. "History is accelerating. . . [C]limate changes predicted over the next half century will be greater than any which have occurred naturally over the last 10,000 years, and global temperatures will be higher than they have been in the last 150,000 years."

Global warming and environmental change will have far more damaging effects on poor countries than on rich ones. We need a new international system to deal with these issues. The combination of problems is formidable, but there is a lot we can do and we need to get on with it before the costs become intolerably high, Sir Crispin stated.

In a busy summer of travelling, Sir Crispin also chaired two meetings at the Aspen Institute which convened a group of international leaders to address critical issues related to the 1992 United Nations Conference on Environment and Development.

A Working Group discussed institutional, technology, financial and legal issues at a meeting from July 18-25. Immediately afterward, a Senior Policy Makers group met for 3 days to examine further important points in issues discussed by the Working Group. Sir Crispin "led the participants towards constructive conclusions with unfailing skill and good humor," according to the Working Group's report.

Chinese Scientists, Institute Team Agree to Share Data

A team from the Chinese Academy of Sciences (CAS) met in Beijing, China with a Climate Institute team August 31 - September 1 to share ideas and information on climate impacts. The Chinese scientists reported on the need of the State Planning Committee to determine soon what mix of energy production will have a minimum impact on the environment.

They expressed concern about the expanding margins of the Gobi Desert, especially if there were small shifts in climate, threatening both the farm belt and Beijing. They agreed to share information such as readings of methane monitoring at three sites within China. And they told of their need to improve their models so that,



International Seminar on Climate Change Impacts, Beijing 1. to r.: Prof. Zhang Youshi, Prof. Zhang Peiyuan, Dr. Ata Qureshi, Dan Power, Dr. Graeme Pearman, Dr. Richard Ball, Dr. Nobuo Mimura, Prof. Lin Erda

for instance, they could incorporate Himalayan Mountains data.

The following day, the team met with Xie Shaoxing and Madame Shu Huifen of the Ministry of Energy (MOE) who told them of their desperate efforts to ascertain potential impacts of various options to develop the Loess Plateau. Climate Institute staff member Qureshi joined a CAS Commission on Integrated Survey of Natural Resources on a trip to the Plateau for a symposium on environmental control and resources development where Qureshi addressed the participants.

The Institute team included Dr. Richard Ball, U.S. Department of Energy; Dr. Nobuo Mimura, Ibaraki University, Tsukuba, Japan; Dr. Graeme Pearman, CSIRO, Australia; and Dan Power and Dr. Ata Qureshi of the Climate Institute.

Dr. Pearman suggested CSIRO might be able to help train young Chinese scientists in modeling. Dr. Ball volunteered to investigate establishment of ties between the U.S. DOE and the MOE, and Dan Power offered to contact U.S. companies holding energy conservation production patents to facilitate a cooperative effort to produce these products inside China.

Brown

At an award ceremony in the UN General Assembly Hall in New York in June, United Earth announced five inaugural Earth Prizes, one of which was awarded to President Carlos Salinas de Gortari of Mexico. President Salinas was cited for his outstanding contributions to environmental statesmanship by the United Earth organization which is dedicated to promoting respect for the environment.

Because President Salinas was unable to attend the New York ceremony, Noel Brown, North American Regional Director of UNEP and also a Climate Institute Board member, accompanied other United Earth officials to Mexico to bestow the prize a few days later.

W. Alton Jones Foundation Awards Institute Grant

The W. Alton Jones Foundation in July 1991 granted the Climate Institute \$200,000 (over two years) to promote awareness within the developing world of the impacts of climate change. The Institute will use these funds to help support international briefings for both diplomats and environmental ministers of developing countries.

The Foundation, headquartered in Charlottesville, Virginia, awards grants in two areas — protecting the global environment and preventing nuclear warfare — for the following programs: the sustainable society and the secure society. In 1990 the W. Alton Jones Foundation provided a \$50,000 grant to the Climate Institute.

Climate Institute News

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Powers

Board Member Chuck Powers has been named a recipient of the 1991 Rene Dubos Environmental Awards. Powers, who is a founding partner of the Boston firm, Resources for Responsible Management, was recognized for his commitment to making public processes and policy more humanistic and for his continuing leader-



Chuck Powers

ship in management ethics. He was also cited for improving public-private sector collaboration on controversial public issues, especially those concerned with environmental health and safety.

During the 1980s Powers played a key role in establishing five pioneering, public-private institutions which addressed specific environmental issues: health effects of auto emissions, hazardous waste site cleanup, evaluation of health risks, asbestos research, and superfund site remediation.

While vice president for public policy and chief environmental officer of Cummins Engine Company, he developed an innovative portion of the 1977 Clean Air Act Amendments.

applying clean product specifications to both imports and exports.

Finally, the Declaration recognizes that education is integral to the achievement of the conference's objectives and points out that formal education must reflect long-term environmental considerations as opposed to short-term economic goals. It supports the development of a Greenhouse Action Women's Network and encouragement of participation by youth groups in decision-making and in setting their own agendas and action programs.

John Topping attended the conference representing the Institute, along with Climate Institute Advisory Board members Graeme Pearman and Tom Roper of Australia and H. Nuzhet Dalfes of Turkey's Bosphorus University, plus Ata Qureshi, Director of the Institute's Global Environment Program. Tom Roper hosted a lunch for the Institute group.

Melbourne Declaration

(continued from page 1)

Director of Greenhouse Action Australia, the Conference, attended by 270 delegates from Australia and international representatives from four continents, calls on:

- all levels of government in Australia to accelerate plans for stabilizing greenhouse gas emissions and give them priority funding;
- local authorities to develop sustainable cities;
- industries to develop new, environmentally sound technologies to meet the global climate challenge; and
- individuals to make life-style changes that would lead to climate stabilization and ecological sustainability.

Dr. Noel Brown, North American Regional Director of UNEP and also an Institute Board member, was a moving force throughout the three-day meeting and presented the Draft Conference Overview statement at the concluding session, presided over by the Ambassador for the Environment, Sir Ninian Stephen, an Institute Board of Advisors member.

Proposed actions are built around six themes: urban habitat, natural resource management, energy use, transportation, cleaner production, community outreach and public education.

The final Declaration urges developing and redeveloping of buildings already constructed to allow continuing

reduction of greenhouse gases to meet the Toronto targets and beyond. It advocates focusing urban growth in higher density areas currently demonstrating low energy usage. Small scale redevelopment should be encouraged, especially emphasizing self-reliance.

Specifying a comprehensive list of actions that would raise the awareness of farmers, who generally see greenhouse as an urban issue, the Declaration urgently recommends programs to help agriculture and forestry understand they are potential sequesterers as well as emitters of CO₂.

Stating the cornerstone of greenhouse limitation as aggressive energy efficiency, the conference proposes developing emission reduction goals for each specific greenhouse gas, and initiating programs to achieve these goals at least cost. Progress should be monitored.

The conference suggests reducing travel distances by 10%, reducing vehicle fuel consumption by at least 10%, increasing use of public transit by at least 80%, and increasing walking and cycling by at least 100%. As steps to achieve these goals the Declaration advises reducing travel distance through land use planning, increasing fuel efficiency by improved technology and changes in driving style and shifting freight back to rail.

To lessen the impact of waste on the environment, the Declaration suggests designing products to minimize their life cycle impact on the environment, and



Panel Weighs Risk to Coral

Recent reports about the extinction of a species of coral and of coral reef bleaching at various sites around the world raise concern about coral health. However baseline and survey data for a rigorous scientific assessment of the nature and extent of the problem is not adequate, according to the proceedings of a recent meeting.

The Workshop on Coral Bleaching, Coral Reef Ecosystems and Global Change was held in Miami, Florida, June 17-21, 1991; Organizing Committee members were Christopher d'Elia, U. of Maryland; Robert Buddemeir, Kansas Geological Survey; and Stephen Smith, U. of Hawaii.

The Workshop recommended setting up five international assessment working groups as soon as possible. It also stated that some policy actions on certain key environmental issues affecting coral reefs need not await study outcomes.

The Report of the Proceedings of the Workshop may be obtained from Director Christopher F. D'Elia, Maryland Sea Grant, 1123 Tallaferro Hall, College Park, MD 20742, FAX 301/314-9581.

Horn of Africa

(continued from page 1)

The plight of refugees is identified as a high priority in the IPCC Impacts Report. "The gravest effects of climate change may be those on human migration as millions are displaced" by severe drought and other consequences, says the Policymakers' Summary of IPCC Working Group II. The full IPCC report, Potential Impacts of Climate Change, states, "Environmental refugees, people displaced by degradation of land, flooding or drought, are becoming a much larger factor in many developing countries." The areas to which they flee are apt to have inadequate health, sanitation and other support services. Epidemics may sweep through refugee camps and settlements and spill over into surrounding communities. This is what relief authorities fear for the Horn of Africa, which has always been one of the world's major refugee-producing regions, and is the most poorly assisted. The quality of care has generally deteriorated in the last three years.

In Sudan, 9 million of a population of 26 million are affected by the intense 1990 drought and civil strife, leading to a serious decline in the Sudanese economy. The result has been severe food shortages and famine, increasing malnutrition, and soaring prices of scarce food supplies. Especially in the western area of the country, starvation deaths are occurring in a number of areas.

Sudan

There are more than 800,000 refugees in Sudan from Zaire, Uganda, Ethiopia, Chad and the Central African Republic. Since May, more than 50,000 ex-military Ethiopians and their families have crossed into Sudan. Repatriation has been delayed but was expected to resume in late September. Over 250,000 Sudanese refugees have returned to southern Sudan from camps in Ethiopia.

Displaced persons account for 15 percent of the country's population. Southern Sudan is a war zone; many civilians have left their homes and headed north, crowding into towns and cities where health conditions are deteriorating. Drought in the western areas has impelled rural migration to the south and to Khartoum. There are 40,000 children whose parents have either died or be-

come separated from them. There have been extensive livestock deaths.

Ethiopia

Since the victories of the Ethiopian and Eritrean armies over the remnants of the 14-year-old Mengistu dictatorship, the people of Ethiopia are facing new risks. In many parts of the country, basic health services no longer function and essential health programs are disrupted. Disease control activities have broken down. Many animals have died. Seeds for planting have been lost or eaten.

Eight million are estimated to be affected by drought conditions. The repatriation of Eritreans and Tigreans who were refugees in Sudan is now politically possible. But their home areas are devastated, and repatriation could turn desperate refugees into internally displaced persons. Overwhelmingly the refugees are women, children, the old, and victims of the region's conflicts.

More than 350,000 who had fled to Somalia have returned and are living in precarious circumstances in the east and south. As a result of demobilization which began in July, there have been massive movements of ex-soldiers and their families to the south; many lack food, shelter, clothing, access to clean drinking water and health care.

Eritrea

Eritrea, Ethiopia's northernmost province, on the Red Sea, after winning a 30-year war against the old central government, is suffering its most severe famine with two million at risk of starvation. Last year's crop failure is reported by Sharon Pauling, African policy analyst of Bread for the World, as "massive and consistent, with migration a difficult option. After years of fighting and famine, the population is chronically malnourished, wells are drying up, disease is on the rise, livestock are dying, the people are burning their furniture for firewood."

Somalia

Somalia is in ruins; even basic essentials such as water, shelter, and medical attention are no longer obtainable. The major towns in the North, Boroma, Hargeisa, and Burao, were destroyed when the civil war began in May 1988. In some large towns, 85 percent of the hous-

ing is damaged or totally ruined. The communication systems, airports, hospitals, banks, hotels, government ministries and institutions no longer function. Agricultural activities have been affected by the drought and, of course, the conflict. Livestock have been lost because of theft, drought, disease or malnutrition. Irrigation pumps, tractors, and veterinarian facilities have been destroyed.

Four and a half million people, mostly women and children, are reported at serious risk. Food shortages are acute, prices skyrocketing. Malnutrition in some areas is very high.

The Isaaq clan in the northern region of the country has for years suffered repression and discrimination from the country's autocratic leadership. It recently declared "Somaliland" independent from the south, further complicating the political situation.

However, Roger Winter, Director of the U.S. Committee for Refugees, reports the country is now stable enough for relief and action is needed quickly to head off famine, epidemics and panic. Camel herds, the major source of food and cash income, need to be vaccinated. Land mines must be removed from cities in the north so that refugees can return.

Djibouti

Since May, Djibouti has been spending scarce resources to buy basic food and shelter, medicines and medical services for newly arrived refugees. The nutritional status of the arriving refugees is classified as "poor."

War and famine have killed two million in the Horn of Africa and displaced another 14 million since 1985. Despite a recent rise of 3 million in the world refugee population, the UN High Commissioner for Refugees has about half the resources to assist each refugee that the organization had ten years ago.

U.S. Assistance

Possible U.S. help for the Horn of Africa is contained in the U.S. Foreign Aid Bill which has already gone through conference. A summary of the Bill's Conference Report is printed in the September 27 issue of the Congressional Record.

Calendar of Climate-Related Events, 1991-1992

- October 22-25 *Beijing, China*
Environmental Changes and Their Ecological Effects, sponsored by Science Comm. on Problems of Environment (SCOPE) et al.
 Contact: Liu Jingyi, POB 934, Beijing, P.R. China 100083
- October 23-25 *Seattle, WA*
US/Canada Symposium on Implications of Climate Change for Pacific Northwest Forest Management, sponsored by US Nat. Clim. Off, NOAA and Canadian Clim. Ctr., Atmospheric Environment Service
 Contact: Conference Coordinator, 206/543-0867
- October 26-November 2 *El Minya, Egypt*
Famine Vulnerability and Most Critical Regions/Places, Second International Famine Workshop, sponsored by the International Social Science Council et al.
 Contact: F.N. Abraham (Germany), 0049-921-552-277
- October 28-29 *Johannesburg, South Africa*
Southern African International Conference on Environmental Management. Focus on sustainable development in southern Africa.
 Contact: J.C.A. Hobbs, 27-11-800-5401
- October 29-31 *Geneva, Switzerland*
Intergovernmental Panel on Climate Change, 6th Plenary Session
- October 29-November 2 *Miami, FL*
Globescope Americas: Charting a Sustainable Future, organized by Global Tomorrow Coalition
 Contact: John McKain, 202/628-4016
- November (No date specified) *Khartoum, Sudan*
Global Warming and Human Health, international symposium organized by International Heat Stress Research Centre
 Contact: Moneim Attia, 74084 (must be dialed through operator) or Telex: 23144 IHSRC SD
- November 4-7 *Geneva, Switzerland*
World Clean Energy Conference, organized by the World Circle of Consensus (CMDC)
 Contact: CMDC, 41 1 463 02 26
- November 4-8 *Miami, FL*
Global Assembly of Women and the Environment — Partners in Life, sponsored by UNEP et al.
 Contact: Waafas Ofoosu-Amaah, 202/347-1514
- November 5-7 *Albuquerque, NM*
Climate and Water Resources Management Conference, sponsored by US EPA, NOAA, et al.
 Contact: Michael Greene, 202/479-4041
- November 8-12 *Miami, FL*
World Women's Congress for a Healthy Planet, Women's Environment and Development Program
 Contact: IPAC Secretariat, 212/759-7982
- November 12-17 *Los Angeles, CA*
Fifth National Urban Forest Conference, organized by American Forestry Assoc., USDA Forest Service, et al.
 Contact: Phil Robdell, 202/667-3300
- November 14-16 *Seoul, Korea*
Global Climate Change: The Cost-Effectiveness of Energy Technologies for Reducing Greenhouse Gases, sponsored by Korean Energy Eco. Inst. et al.
 Contact: Toufiq Siddiqi, 808/944-7233
- November 16-18 *Washington, DC*
Global Change and the Human Prospect: Issues in Population, Science, Technology, and Equity.
 Sponsored by Sigma Xi and other associations.
 Contact: Nancy Berry, 919/549-4691 (or in US: 1-800-243-6534)
- November 18-20 *Agra, India*
International Workshop on Human Settlements for Sustainable Development
 Contact: Indian Environmental Society, U-112 (3rd Floor) Vidhata House, Vikas Marg, Shadarpur, Delhi-110092, India
- November 18-20 *Melbourne, Australia*
Transport and Greenhouse: Toward Solutions
 Contact: Conference Secretariat, 61-3-387-9955
- November 18-21 *Sydney, Australia*
Coal, the Environment and Development: Technologies to Reduce Greenhouse Gas Emissions, sponsored by International Energy Agency, et al.
 Contact: Des Kennedy, 61-7-598-3607
- November 24-29 *Vienna, Austria*
Agenda of Science for Environment and Development into the 21st Century (ASCEND 21), organized by UNCED and International Council of Scientific Unions
 Contact: ICSU, 33 1 45 25 03 29
- December 2-6 *Baltimore, MD*
The Chemistry of the Atmosphere: Its Impact on Global Change, sponsored by International Union of Pure and Applied Chemistry
 Contact: Robert Sievers, 303/492-7493
- December 3-5 *Baltimore, MD*
International CFC and Halon Alternatives Conference
 Contact: Jan McCusker, 301/695-3762
- December 5-6 *Washington, DC*
Global Climate Change: Linking Energy, Environment, Economy and Equity, sponsored by Center for Environmental Information, Inc. Washington Plaza Hotel
 Contact: Bill Wagner, 716/271-3550
- December 6-9 *New Delhi, India*
IGU Seminar on Monitoring Geosystems Perspectives for the 21st Century
 Contact: R.B. Singh, Dept. Geography, Univ. Delhi, Delhi 110 007, India
- December 9-13 *Melbourne, Australia*
Physical Causes of Drought and Desertification, convened by CSIRO Division of Atmospheric Research, Melbourne University.
 Contact: Barrie Hunt, 61 3 585 7658
- December 9-13 *San Francisco, CA*
American Geophysical Union fall meeting. Includes topics such as climate change since the little ice age, Arctic-ocean-atmosphere-ice interactions in global change, etc.
 Contact: AGU, 202/462-6903
- December 9-20 *Geneva, Switzerland*
Intergovernmental Negotiating Committee, Session IV
- December 17-21 *Paris, France*
Global NGO Conference on Environment and Development
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- 1992**
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- January 4-11 *Lima, Peru*
2nd International Congress of Geography of the Americas
- January 5-10 *Newport Beach, CA*
Atmospheric Methane, 1st Annual National Institute of Global Environment Change sponsored conference.
 Contact: F. Sherwood Rowland, 714/856-6016
- January 5-10 *Atlanta, GA*
Sixth Conference on Satellite Meteorology and Oceanography, sponsored by American Meteorological Society. Poss. topic: developing data bases for climate change studies.
 Contact: James Purdom, 303/491-8446
- January 14-16 *Cambridge, MA*
The World at Risk: Natural Hazards and Climate Change, organized by Massachusetts Institute of Technology
 Contact: Center for Global Change Science, 617/253-4902
- January 19-26 *Seville, Spain*
8th General Assembly of the Scientific Committee on Problems of the Environment (SCOPE)
 Contact: Veronique Plocq, 33-1 45-25-04-98
- January 26-31 *Dublin, Ireland*
International Conf. on Water and the Environment, organized by World Meteorological Organization
 Contact: Gordon Young, 41-22 730-8275
- January 27-February 1 *Fortaleza, Ceara, Brazil*
Impacts of Climatic Variations and Sustainable Development in Semi-arid Regions, sponsored by Esquel Brazil Foundation.
 Contact: Antonio Magalhaes, 55-61-322-2062
- January 28-30 *Jaipur, India*
International Conference on Global Atmospheric Change, organized by Indian Environmental Society and Asian Environmental Society.
 Contact: Indian Environ. Soc., U-122 (3rd Floor) Vidhata House, Vikas Marg, Shakarpur Delhi-110092, India
- February 8-25 *Cartagena de Indias, Colombia*
8th United Nations Conference on Trade and Development (UNCTAD)
 Contact: Jacques Cuttat, 41-22 734-60-11
- February 10-21 *Caracas, Venezuela*
4th World Congress on National Parks and Protected Areas
 Contact: IUCN, Gland, Switzerland, 41-22 64-91-14
- February 12-14 *Genoa, Italy*
Ente Colombo '92: Mediterranean and Caribbean Countries for the Preservation of their Seas
 Contact: Giuliano Ferro, 39-10 353-8272
- February 13-15 *Geneva, Switzerland*
Intergovernmental Panel on Climate Change, 7th Plenary Session
- February 18-28 *New York, NY*
Intergovernmental Negotiating Committee, Session V

PrepCom 3

(continued from page 1)

to undertake new commitments without funding.

There was a greater meeting of the minds on technology transfer, which is considered less of a sticking point. Some progress on forestry and ocean issues was reported; climate change encountered much more difficulty.

Some delegates and environmentalists reported the U.S. contributed to a feeling of deadlock because it seemed more concerned with damage limitation than vision, taking a negative stand on any new international commitments, institutions, and innovative proposals. However, while the U.S. has rejected "uniform," "specific," and "single" limits for CO2 reduction, it has not ruled out limits altogether. According to the interpretation of one delegate, the U.S. may be with us (the EC) if the costs are bearable. Another observer feels the UNCED process is in serious difficulty and even at risk of failure unless the U.S. is willing to breathe life into it.

A few days later, from September 9-20, the Intergovernmental Negotiating Committee (INC), which is concerned solely with negotiating a framework convention for climate change, met in Nairobi for its third session.

In an opening speech to the more than 100 attending delegates, Mostafa Tolba, Executive Director of UNEP, called for specific commitments under a climate convention, based on the idea that the convention should limit temperature increases to a certain level that allows life on earth to continue, a basic concept not yet addressed by negotiators. Tolba and the European Community have invoked ecological limits as a guiding principle of a climate convention.

A Stockholm Environment Institute (SEI) 1990 report, Responding to Climate Change: Tools for Policy Development, identifies targets for limiting the rate and magnitude of climate change. The maximum target of sea level rise is 20-50 mm per decade, a maximum total rise of 0.2 to 0.5 m. above 1990 global mean sea level. A rise of 20 mm per decade would permit the vast majority of vulnerable ecosystems, such as natural wetlands and coral reefs, to adapt and would limit storm damage. Restricting the rise to 0.5m. would prevent the complete destruction of island nations, but would entail large increases in the societal and ecological harm caused by storms.

At a maximum temperature rise of 1 degree C above pre-industrial levels (0.5 C above today's level), rapid, unpredictable and non-linear response could cause ex-

World Bank Appoints El-Ashry to New Post

World Bank President Barber Conable has announced the appointment of Mohamed T. El-Ashry, formerly Senior Vice President of the World Resources Institute, as Director of the Bank's Environment Department effective June 1, 1991.

Mr. El-Ashry is also Senior Environmental Adviser to the United Nations Development Programme and Special Adviser to the Secretary-General of the 1992 UN Conference on Environment and Development.

Mr. El-Ashry is assuming this position, Mr. Conable said, "at a time when the Bank is rapidly expanding its environmental lending program, greatly enhancing environmental assessment of its operations in all sectors, and becoming a major actor in global environmental-protection issues and initiatives."



tensive ecosystem damage. Beyond 2 degrees C risks of grave damage are likely to increase rapidly, the SEI report states.

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Roger Revelle Dies

Roger Revelle, a distinguished scientist who was one of the first to realize that global warming might become a world concern, died July 14.

In the 1950s, while analyzing air samples from the top of a Hawaiian volcano, Dr. Revelle became alarmed by the increase of carbon dioxide from global use of fossil fuels, leading to his apprehension that the atmosphere might heat up.

Early in his long and diverse career, intrigued by the heat flow through ocean-floor sediments, he helped to demonstrate that hot material was flowing under the ocean, a finding that anticipated the theory of plate tectonics. From 1951-64 he headed the Scripps Institution of Oceanography at La Jolla, now part of the University of California at San Diego. With colleagues he promoted what later became the Ocean Drilling Program and helped organize the 1957-58 International Geophysical Year.

Bangkok Meeting Proposes Regional Networks

Participants at a 3-day June conference, Global Warming and Sustainable Development: An Agenda for the '90s, in Bangkok, Thailand, proposed pooling the resources of institutions and nations in the Asia Pacific region into a collaborative network. This would facilitate greater attention to specific conditions and constraints and better assure that questions of equity and the viewpoints of developing countries would be considered.

The conference took special note of trends towards degradation of living re-

In the 1960s, concerned about the problems of developing countries, he founded and became director of the Center for Population Studies at Harvard University.

In October 1987, the Climate Institute gave one of its first two annual awards to Dr. Revelle for outstanding scientific achievement in furthering knowledge of the global climate system.

sources, reduction of agricultural productivity, decreased viability of trees, and declining vitality of forests and fisheries. The continuing unsustainable transfer of areas from forests into roads and cities, pasture and cropland, and degraded land, particularly in the tropics, is creating a spread of impoverishment. The accumulation of impoverished lands is commonly overlooked, conferees asserted.

The conference was sponsored by the Thailand Development Research Institute, the Institute for Research on Public Policy (Ottawa) and the Woods Hole Research Center.

Copies of the Conference Statement may be obtained from the Woods Hole Research Center, P.O. Box 296, Woods Hole, MA 02543, FAX 508/540-9700.



CLIMATE INSTITUTE

324 Fourth Street, NE
Washington, D.C. 20002

The Climate Institute is a private nonprofit organization formed to advance public understanding of climate change including the greenhouse effect and of strategies to avert stratospheric ozone depletion.