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DRAFT

John Change

REPORT OF THE SECOND MEETING OF GOVERNMENT REPRESENTATIVES
TO DRAFT A MINISTERIAL DECLARATION FOR THE SECOND WORLD CLIMATE CONFERENCE
GENEVA, 2-4 NOVEMBER 1990

1. INTRODUCTORY REMARKS

1.1 The second meeting of government representatives to prepare a draft Ministerial Declaration for consideration at the Ministerial portion of the Second World Climate Conference (Geneva, 29 October to 7 November 1990) was held 2-4 November 1990 at the Palais des Nations, Geneva.

1.2 Mr. Zou Jingmeng, Chairman of the Second World Climate Conference, President of the World Meteorological Organization and Co-Chairman of the meeting, in the presence of Professor G.O.P. Obasi, Secretary-General of WMO, and Dr. M.K. Tolba, Executive Director of the United Nations Environment Programme, welcomed delegates and noted that this was a continuation of the meeting held in Geneva, 27-29 September 1990, with the same Officers, Agenda and Organization. Consequently, delegates had before them as their starting point the draft text elaborated at that meeting. As the scientific and technical part of the Second World Climate Conference was continuing, his

- 3 -

3 CONTINUATION OF PREPARATION OF THE DRAFT DECLARATION

3.1 Representatives then began a general discussion on the first of these issues with a view to the detailed discussions being pursued in an open Working Group, which would work whilst the plenary considered the preamble and the other two main issues.

3.2 During the second day (3 November) two sessions were held at which the Preamble of the Draft Declaration was accepted and there was extensive discussion on the issues of global strategies, policy considerations for actions and precautionary measures. In parallel with the plenary, the open-ended Working Group, co-chaired by Mexico and Norway, continued its discussion on the issues of stabilization and reduction of greenhouse gases and later in the evening was given the additional task of reviewing the paragraphs describing the funding and transfer of technology.

3.3 The meeting continued in this way, with the Working Group and the plenary mostly working in parallel. At mid day on Sunday, 4 November, Mr. Zou Jingmeng, Chairman of the Second World Climate Conference, presented the Statement of the Scientific and Technical Sessions of the Conference. The meeting received the Statement with appreciation and endorsed the main thrusts of its conclusions and recommendations. A copy of the Statement is at Annex 1.

REPT01

- ANNEXES 1 Conference Statement of the Scientific and Technical Session
 of the Second World Climate Conference
- 2 Draft Ministerial Declaration
- 3 List of Participants (English only)

REFTO1

Global Change file

Document Originally
Attached to
Following Page

Dr. Bromley
- Vickie Sutton

SUMMARY OF SWCC

November 5, 1990

The SWCC negotiating draft was finished at 3:30 am ^{on Monday} ~~the Sunday morning~~, November 5, 1990.

^{the} Delegation worked hard to achieve acceptance of language suitable to U.S. On the 5 major policy issues summarized in the GCWG.

Two products from the SWCC involving the U.S. (attached):

1. Scientific Conference Statement - Scientific/Technical Session
2. SWCC Ministerial Declaration

A draft ministerial declaration produced in Geneva in September with heavily bracketed language was to be resolved during the Conference. The U.S. prepared an alternative draft omitting technical language and using language more ministerial in tone.

The draft was circulated along with different alternative drafts from the Saudis, Latin Americans, and Norwegians.

Although the U.S. draft was not used, it was cited as an example of good language with more of the ministerial tone they had hoped to achieve. As a result much of the technical language was dropped and an agreement was reached language for a draft which largely satisfied all concerns of the U.S. delegation. [Some language remains bracketed, but is expected to be resolved in the next two days.] However, there are still brackets the U.S. feel may be troublesome.

SPECIFIC SUCCESSES IN THE MINISTERIAL DECLARATION

PARAGRAPH 7

Some of the most contentious language to be considered was the precautionary principle which required action without consideration of uncertainty. The language itself was originally derived from Germanic law, and found itself into the Bergen Declaration and the draft Geneva ministerial declaration. It was essential that the U.S. change the language or it would have been impossible to sign.

The precautionary principle has been revised to provide for "cost-effective measures" in the face of scientific uncertainty.

SPECIFIC PROBLEMS IN THE MINISTERIAL DECLARATION

PARAGRAPH 12

Bracketed language listing the European countries and their concerted "regional"

plan to take action clearly isolates the U.S. The Europeans worked especially hard for the language. In exchange, the U.S. included language in the same paragraph to "acknowledge the initiatives of the United States which will have significant effects on limiting emissions of greenhouse gases." (The reaction of the entire room was laughter, and incredulous snickering when the statement was read out.) The U.S. language may however, be used as a bargaining chip to remove the European community effort language in the same paragraph.

PARAGRAPH 15

Language concerning financial resources for developing countries is as follows: "we recommend that adequate and additional financial resources should be mobilized. . ." leaving the process, criteria and characteristics of the resources broad enough that it should not be a problem. However, this is one area of concern to continue monitoring through the end of the conference.

PARAGRAPH 21

Bracketed language focuses on the reduction of CO₂ in reducing energy-related emissions, and would serve to steer away from our efforts to develop the comprehensive approach; however, paragraph 14 appears to counterbalance the CO₂ focus, recommending that "all greenhouse gases, sources and sinks be considered in the most comprehensive manner possible."

PARAGRAPH 28

Bracketed language includes the consideration of the "feasibility of forestry options" as part of the scope of global framework negotiations. The U.S. has an opportunity to take the lead on the forestry convention and fulfill the commitment made by George Bush at the Houston G-7 summit to have a Forestry Convention by 1992. The forestry issue must take a different track immediately, or it will ultimately become stifled in the climate negotiations and will be part of a timetable which will pass the 1992 commitment.

OTHER PERTINENT PARAGRAPHS

Other paragraphs with specific U.S. interest to be monitored, but which are acceptable at this point in the conference are as follows:

1. Uncertainty issue: Paragraphs 2, 5, 6, and 8.
2. Economics: Paragraph 20.
3. Targets and timetables: Paragraphs 10, 11, 12, and 13.

- 2 -

2. At the First World Climate Conference in 1979, nations were urged "to foresee and to prevent potential man-made changes in climate that might be adverse to the well-being of humanity". This Conference concludes that, notwithstanding scientific and economic uncertainties, nations should now take steps towards reducing sources and increasing sinks of greenhouse gases through national actions and negotiation of a global convention on climate change, and related legal instruments, with the long-term goal of halting the build-up of greenhouse gases at a level that minimizes risks to society and natural ecosystems. A major international observational and research effort will be essential to strengthen the knowledge-base on climate processes and human interactions, and to provide the basis for operational climate monitoring and prediction. The remaining uncertainties must not be the basis for deferring societal response to these risks. Many of the actions that would reduce risk are also desirable on other grounds.

PART I. MAIN CONCLUSIONS AND RECOMMENDATIONS

A. Greenhouse Gases and Climate Change

1. Emissions resulting from human activities are substantially increasing atmospheric concentrations of the greenhouse gases. These increases will enhance the natural greenhouse effect, resulting on average in an additional warming of the Earth's surface. The Conference agreed that this and other scientific conclusions set out by the IPCC reflect the international consensus of scientific understanding of climate change. Without actions to reduce emissions, global warming is predicted to reach 2 to 5 degrees C over the next century, a rate of change unprecedented in the past 10,000 years. The warming is expected to be accompanied by a sea level rise of 65 cm + 35 cm by the end of the next century. There remain uncertainties in predictions, particularly in regard to the timing, magnitude and regional patterns of climate change.

2. Climate change and sea level rise would seriously threaten low-lying islands and coastal zones. Water resources, agriculture and agricultural trade, especially in arid and semi-arid regions, forests, and fisheries are especially vulnerable to climate change. Climate change may compound existing serious problems of the global mismatch between resources, population and consumption. In many cases the impacts will be felt most severely in regions already under stress, mainly in developing countries.

3. Global warming induced by increased greenhouse gas concentrations is delayed by the oceans; hence, much of the change is still to come. Inertia in the climate system due to the influence of the oceans, the biosphere and the long residence times of some greenhouse gases means that climate changes that occur may persist for centuries.

4. Natural sources and sinks of greenhouse gases are sensitive to a change in climate. Although many of the response or feedback processes are poorly understood, it appears likely that, as climate warms, these feedbacks will lead to an overall increase rather than a decrease in greenhouse gas concentrations.

- 3 -

5. The historical growth in emissions has been a direct consequence of the increase of human population, rising incomes, the related exploitation of fossil fuels by industrialized societies and the expansion of agriculture. Under "business-as-usual" assumptions*, it is projected that emissions will continue to grow in the future as a consequence of a projected doubling of energy consumption in the first half of the 21st century and an expected doubling of population by the latter half. As a result, the effect of human-induced greenhouse gas concentrations on the earth's radiation balance would by 2025 correspond to a doubling of carbon dioxide unless remedial actions are taken.

6. Over the last decade, emissions of carbon dioxide (CO₂) contributed 55% of the increased radiative forcing produced by greenhouse gases from human activities. The CFCs contributed about 24% of the past decade's changes, and methane 15%, with the balance due to other greenhouse gases. With controls on CFCs, the relative importance of CO₂ emissions will increase, provided the substitutes for CFCs have minimal greenhouse warming potential. Some 75% of total CO₂ emissions have come from the industrialized countries.

7. The above emissions can be expected to change the planet's atmosphere and climate, and a clear scientific consensus has been reached on the range of changes to be expected. Although this range is large, it is prudent to exercise, as a precautionary measure, actions to manage the risk of undesirable climate change. In order to stabilize atmospheric carbon dioxide concentrations by the middle of the 21st century at about 50% above pre-industrial concentrations, a continuous world-wide reduction of net carbon dioxide emissions by 1 to 2% per year starting now would be required. The Intergovernmental Panel on Climate Change (IPCC) also considered three other emissions scenarios, which would not lead to stabilization of CO₂ concentrations in the 21st century. A 15-20% reduction in methane emissions would stabilize atmospheric concentrations of that gas.

8. This Conference concludes that technically feasible and cost-effective opportunities exist to reduce CO₂ emissions in all countries. Such opportunities for emissions reductions are sufficient to allow many industrialized countries to stabilize CO₂ emissions from the energy sector and to reduce these emissions by at least 20 percent by 2005. The measures include increasing the efficiency of energy use and employing alternative fuels and energy sources. As additional measures to achieve further cost-effective reductions are identified and implemented, even greater decreases in emissions would be achieved in the following decades. In addition, reversing the current net losses in forests would increase storage of carbon. The economic and social costs and benefits of such measures should be urgently examined by all nations. An internationally coordinated assessment should be undertaken through the IPCC.

* "Business-as-usual" assumes that few or no steps are taken to limit greenhouse gas emissions. Energy use and clearing of tropical forests continue and fossil fuels, in particular coal, remain the world's primary energy source. The Montreal protocol comes into effect but without strengthening and with less than 100 percent compliance.

- 4 -

9. Countries are urged to take immediate actions to control the risks of climate change with initial emphasis on actions that would be economically and socially beneficial for other reasons as well. Nations should launch negotiations on a climate change convention and related legal instruments, without delay and with the aim of signing such a convention in 1992.

B. Use of Climate Information in Assisting Sustainable Social and Economic Development

Climate data, analyses, and eventually climate predictions can contribute substantially to enhancing the efficiency and security of economic and developmental activities in environmentally sustainable ways. These benefits are particularly important in food and wood production, water management, transportation, energy planning and production (including assessment of potential resources of biomass, hydropower, solar and wind energy), urban planning and design, human health and safety, combatting of drought and land degradation, and tourism. This requires both data on the climate system, and its effective application. Data acquisition, collection, management and analysis must be more vigorously supported in all countries and special assistance provided to developing countries through international cooperation. Transfer of techniques for applying climate information should be accelerated through more widespread use of software (e.g. CLICOM) for readily available personal computers and other means. Further development of methods for predicting short-term variations in climate and the environmental and social impacts should be vigorously pursued. These advances would provide enormous economic and other welfare benefits in coping with droughts, prolonged rain, and periods of severe hot and cold weather. Such predictions will require major steps forward in ocean-atmosphere-biosphere observing systems. Much greater efforts are needed to increase involvement in these fields by developing countries, especially through increased education and training.

C. Priorities for Enhanced Research and Observational Systems

1. A consensus exists among scientists as summarized in the Report of Working Group I of the IPCC that climate change will occur due to increasing greenhouse gases. However, there is substantial scientific uncertainty in the details of projections of future climate change. Projections of future regional climate and climate impacts are much less certain than those on a global scale. These uncertainties can only be narrowed through research addressing the following priority areas:

- clouds and the hydrological cycle
- greenhouse gases and the global carbon and biogeochemical cycles
- oceans: physical, chemical and biological aspects; and exchanges with the atmosphere
- paleo-climatic studies
- polar ice sheets and sea ice
- terrestrial ecosystems.

- 5 -

2. These subjects are being addressed by national programmes, the World Climate Research Programme and the International Geosphere-Biosphere Programme. Increased national support and substantially increased funding of these programmes is required if progress on the necessary time scale is to be made in reducing these uncertainties.
3. Present observational systems for monitoring the climate system are inadequate for operational and research purposes. They are deteriorating in both industrialized and developing regions. Of special concern is the inadequacy of observation systems in large parts of the southern hemisphere.
4. High priority must be placed on providing high-quality, long-term data for climate-related studies. Data should be available at no more than the cost of reproduction and distribution. A full and open exchange of global and other data sets needed for climate-related studies is required.
5. There is an urgent need to create a Global Climate Observing System (GOOS) modelled on the World Weather Watch Global Observing System and the Integrated Global Ocean Service System and including both space-based and surface-based observing components. GOOS should also include the data communications and other infrastructure necessary to support operational climate forecasting.
6. GOOS should be designed to meet the needs for:
 - (a) climate system monitoring, climate change detection and response monitoring, especially in terrestrial ecosystems
 - (b) data for application to national economic development, and
 - (c) research towards improved understanding, modelling and prediction of the climate system.
7. The main components of such a GOOS would be:
 - (1) an improved World Weather Watch Programme;
 - (2) the establishment of a global ocean observing system (GOOS) of physical, chemical and biological measurements;
 - (3) the maintenance and enhancement of monitoring programmes of other key components of the climate system, such as the distribution of important atmospheric constituents (including the Global Atmosphere Watch), changes in terrestrial ecosystems, clouds and the hydrological cycle, the earth's radiation budget, ice sheets, and precipitation over the oceans.
8. The further development and implementation of the GOOS concept should be pursued with urgency by scientists, governments and international organizations. All countries must ensure a full and open exchange of the data sets needed for climate system research, process and impact studies, and modelling.

- 6 -

9. The impacts of climate variability on human socio-economic systems have provided major constraints to development. Climate change may compound these constraints. In semi-arid regions of Africa, drought episodes have been directly responsible for major human disasters. Research undertaken during the first decade of the WCP and through other international and national programmes has improved drought early warning systems including FAO's Global Early Warning System and increased the reliability of climate impact analyses. But much more remains to be done. Intensified efforts are required to refine further our ability to predict short-term climate variability, anticipate climate impacts, and identify rational strategies to mitigate or prevent adverse effects. The threat of climate change brings new challenges to the future well-being of people. This requires greater efforts to understand impacts of climate change. Mitigation and adaptation strategies are also essential. Immediate steps to be taken include:

- (a) national and regional analyses of the impacts of climate variability and change on society, and study of the range of response and adaptation options available.
- (b) closer co-operation and communication among natural and social scientists, to ensure that climate considerations are accounted for in development planning.
- (c) significant increases in resources to carry out impact/adaptation studies.

10. Improvements in energy efficiency and non-fossil fuel energy technologies are of paramount importance, not only to reduce greenhouse gas emissions but to move to more sustainable development pathways. Such advances will require research and development, as well as technology transfer and co-development.

11. A specific initiative would create a network of regional, interdisciplinary research centres, located primarily in developing countries, and focussing on all of the natural science, engineering and social science disciplines required to support fully integrated studies of global change and its impacts. The centres would conduct research and training on all aspects of global change and study the interaction of regional and global policies.

D. Public Information

People need better information on the crucial role climate plays in development and the additional risks posed by climate change. Governments, intergovernmental and non-governmental organizations should give more emphasis to providing accurate public information on climate issues. The public information and education and training component in the WCP and IGBP must also be expanded.

- 7 -

PART II

Specific Issues:

1. Water

1.1 Among the most important impacts of climate change will be its effects on the hydrological cycle and water management systems, and through these, on socio-economic systems. Increases in incidence of extremes, such as floods and droughts, would cause increased frequency and severity of disasters.

1.2 The design of many costly structures to store and convey water, from large dams to small drainage facilities, is based on analyses of past records of climatic and hydrological parameters. Some of these structures are designed to last 50-100 years or even longer. Records of past climate and hydrological conditions may no longer be a reliable guide to the future. The design and management of both structural and non-structural water resource systems should allow for the possible effects of climate change.

1.3 Data systems and research must be strengthened to predict water resources impacts, detect hydrological changes, and improve hydrological parameterization in global climate models.

1.4 Transfer of existing and novel technologies, for more efficient use of water for irrigation, should be made available to developing countries in semi-arid zones.

2. Agriculture and Food

2.1 Important uncertainties remain regarding the prediction of the magnitude and nature of potential impacts of changing climate and higher CO₂ levels on global food security. The potential impact on food production in developing countries (with more than half the world's population) could be more uncertain than recent reviews suggest.

2.2 High priority should therefore be given to research on the direct effects of rising CO₂ concentrations on food and fibre crop productivity and equal priority should be given to research on agricultural emissions so as to determine agriculture's present and potential role as a source of and sink for greenhouse gases, and to clarify the costs and possible trade-offs arising from limitation measures.

2.3 New or strengthened institutional mechanisms are required to upgrade natural resource inventories, research strategies and extension services to raise agricultural productivity and minimize emissions. These mechanisms should include collaborative programmes between FAO and international and national agencies with stress on interdisciplinary activities on the food security implications.

- 8 -

3. Oceans, Fisheries, and Coastal Zones

3.1 Shorter term variations in the earth's climate are determined by the coupled ocean - atmosphere system. Coastal zones and their associated high biological productivity, including fisheries, are especially affected. Thus, an improved data base of oceanic parameters is considered indispensable for operational climate forecasting. It is recommended that a global ocean observing and data management system be developed for improving predictions of climate change. Research on the ocean will provide quantification of the feedback loops in climate processes. Observation and research on the El Nino - Southern Oscillation phenomena, on upwelling areas and on biological productivity of the open sea are also important.

3.2 Coastal zones, which are the source of most of the global fish catch, are especially susceptible to effects of global warming and sea level rise. Predicting the impact of changes would be of enormous benefit to the increasing number of people living in coastal areas. Thus, it is also recommended that a programme of coastal zone research and monitoring be established to identify the effects of climate change on the coast and coastal ecosystems, and to assess the vulnerability of various natural and managed ecosystems such as coral reefs, mangroves and coastal aquaculture.

3.3 Action should be taken now to develop coastal zone adaptation strategies and policies.

4. Energy

4.1 In order to stabilize atmospheric concentrations of greenhouse gases while allowing for growth in emissions from developing countries, industrialized countries must implement reductions even greater than those required, on average, for the globe as a whole. However, even where very large technical and economic opportunities have been identified for reducing energy-related greenhouse gas emissions, and even where there are significant and multiple benefits associated with these measures, implementation is being slowed and sometimes prevented by a host of barriers. These barriers exist at all levels -- at the level of consumers, energy equipment manufacturers and suppliers, industries, utilities, and governments. Overcoming the barriers obstructing least-cost approaches to meeting energy demands will require responses from all parts of society -- individual consumers, industry, governments, and non-governmental organizations.

4.2 Developing countries also have an important role in limiting climate change. Maintaining development as a principal objective, energy and development paths can be chosen that have the additional benefit of reducing radiative forcing.

- 9 -

5. Land Use and Urban Planning

Population growth, increasing urbanization, and competing demands for finite areas of arable land will produce increasingly severe problems of food supply, energy production, and water resources. Climate changes may exacerbate these problems in some regions. Prudent planning will require baseline analyses of land use, quality and quantity of water resources, and the vulnerability of urbanized societies to environmental change. In particular, improved adaptation of urban areas to local climatic regimes needs to be achieved by more appropriate design of their layouts and building densities, and of building construction through modifications of building and planning regulations. Because conurbations make a major contribution to energy-related greenhouse gas emissions, the design and efficiency of all aspects of urban systems should be enhanced.

6. Health and Human Dimensions

6.1 The direct impact of climate change on people, their health and cultural heritage, could be severe. There is likely to be increased health inequity between peoples of developing and developed countries. Climatic change could result in creating environmental refugees with associated increases of ill-health, disease and death among them.

6.2 Global warming is likely to shift the range of favourable conditions for certain pests and diseases, causing additional stresses on people, particularly those of the semi-arid tropics. It must be appreciated however that serious problems may arise in all parts of the world.

6.3 Research into how human behaviour contributes to and responds to climate change must have increased emphasis. Public awareness and education programmes are particularly essential in this regard.

7. Environment and Development

7.1 Climate change, superimposed on population pressures, excessive consumption, and other stresses on the environment imperils the sustainability of socio-economic development throughout the world. In addition, slowing climate change will give countries more time to enhance their prospects for sustainable development. The developed countries need to reduce emissions and assist the developing countries to adopt new, clean technologies.

7.2 Climate change has such important implications for the sustainability of development that policy responses, including measures to reduce greenhouse gases, measures to reduce deforestation, and the commitment of financial and other resources, are justified for that reason alone. Economic policies, such as subsidies and trade restraints, can distort markets so they harm the environment and contribute to global warming and sea level rise. There is an imperative need for development policies that not only reduce global warming trends but also increase economic and social resilience.

- 10 -

8. Forests

While increasing forest cover can contribute to the slowing of global climate change, this is not the major cure for the problem.

Five priority actions are recommended:

Firstly, assessing national opportunities to increase forest carbon storage commensurate with national resource development policies, developing an approach by 1992 and completing assessment by 1995.

Secondly, managing the world's forests to optimize biomass and resultant carbon storage in addition to the maintenance of sustainable yields of forest products, biological diversity, water quality and the many other values that forests provide.

Thirdly, accelerating research to assess the added contribution that forests can make to atmospheric CO₂ reduction and the impacts of climate change on the world's forests.

Fourthly, designing and implementing international monitoring systems to determine conditions and changes in forest ecosystems in response to anticipated climate changes.

Finally, supporting the development of a proposed international instrument on conservation and development of the world's forest linked with the proposed climate and biodiversity conventions.

PART III

Organizational and Policy Issues for International Activities

1. The future structure of the WCP

1.1 The organizational framework for international scientific research is in place, constituted by the WCRP, emphasizing the physical aspects, and the IGBP, covering bio-geochemical aspects.

1.2 The World Climate Data Programme, renamed the World Climate System Monitoring Programme, should be redefined to take into account new objectives.

1.3 Additional elements of the new WCP (WCP-2) should cover adaptation and mitigation, and education.

1.4 Governments should establish national committees for the WCP to mobilize support for national activities and to coordinate efforts. The UN agencies and ICSU should work towards ensuring regular contact and exchange of information with national committees.

- 11 -

1.5 The mechanism established for overall coordination of the WCP, involving meetings of the chairs of steering bodies for the various components, should be actively supported by WMO, the other UN bodies concerned and ICSU. Annual meetings of Executive Heads should consider their recommendations.

1.6 Restructuring and strengthening of the WCP will also be necessary to support new activities, such as the development of the proposed GOOS. The Conference recommended that a proposal for the new structure of WCP be formulated and presented to the Eleventh World Meteorological Congress, May 1991, and at appropriate meetings of other participating agencies.

2. Special needs of the developing countries

2.1 As stated in the IPOC report, industrialized and developing countries have a common but differentiated responsibility for dealing with the problems of climate change. The problem is largely the consequence of past patterns of economic growth in the industrial countries. However, in future the much needed economic growth in the developing countries could play an important role in determining the rate of climate change.

2.2 Developing countries are being asked to participate in the alleviation of the legacy of environmental damage from prior industrialization. If they are to avoid the potentially disastrous course followed by industrialized countries in the past, they need to adopt modern technologies early in the process of development, particularly in regard to energy efficiency. They also must be full partners in the global scientific and technical effort that will be required. It is clear that developing countries must not go through the evolutionary process of previous industrialization but rather, must "leapfrog" ahead directly from a status of under-development through to efficient, environmentally benign, technologies presently found only in the most advanced industrial economies.

2.3 Although developing countries have collaborated in providing data, and participated to a degree in meetings and research, they have benefited to a lesser extent from the analyses developed from their contributions, and even less so from the applications derived therefrom.

2.4 Therefore, a massive and sustained flow of scientific and technological expertise towards the development of the intellectual resources, technical and institutional capacity of the developing countries is a necessary complement to the efforts of those countries.

2.5 Developing countries should be assisted to build up their capabilities

- to monitor, assess and apply climate information;
- to prepare inventories of greenhouse gases emissions and future emissions projections;
- to identify impacts of potential global warming;

- 12 -

- to prepare cost estimates and priorities for response strategies to adapt and mitigate problems posed by climate change;
- to participate in the World Climate Programme.
- o The mechanisms of the transfer of technology and provision of technical assistance and co-operation to developing countries should take into account considerations such as the need for preferential and assured access, intellectual property rights, the environmental soundness of such technology and the financial implications.
- o Taking note that industry plays a significant role in the development and transfer of science and technology, efforts by industry to promote further the development and transfer of environmentally sound technologies should be encouraged, and policies to encourage such efforts should be formulated.
- o Additional financial resources will have to be channelled to developing countries for those activities which contribute both to limiting greenhouse gas emissions and/or adapting to any adverse effects of climate change, and promoting economic development. Areas for co-operation and assistance could include the efficient use of energy, land use planning, forest management, soil and water conservations, strengthening of observational systems and scientific and technological capabilities.

3. Co-operation in international research

3.1 The existing and planned research projects of the WCRP and the IGBP address the highest priority scientific issues related to the understanding and prediction of climate variability and change.

3.2 These programmes should be implemented completely and rigorously. It is particularly important that adequate funding including long term funding be provided.

3.3 In view of the progress made in climate research, it is now timely to proceed to the detailed design of an operational global climate observing system, together with the data communications and other infrastructure needed to support operational climate forecasting. Governments should enter into early discussions aimed at international cooperation in operational climate forecasting and climate change research.

4. Co-ordinated International Activities

4.1 The Conference endorsed the three streams of international activity:

- a. continuing global measurement and research efforts through the WCP, IGBP, and other related international programmes.

- 13 -

- b. Assessment functions of a continuing IPCC to support negotiation and administration of a Convention.
- c. Development of a Convention on Climate Change for governmental action.

4.2 The UN Conference on Environmental and Development (Brazil 1992) provides a valuable opportunity to relate the above three themes to all the other environment/development issues and objectives being examined by the Conference. It is therefore essential that the three streams should interact effectively with UNCED.

4.3 It is proposed that the sponsoring agencies for the SWOC consider the possibility of holding a Third World Climate Conference at an appropriate time about 2000 AD.

5. Policy Development

5.1 The development of policy regarding climate change requires on the part of policy makers an understanding of the underlying science and a weighing of the scientific uncertainties associated with the prediction of climate change and its likely impacts. An important aspect of future work is therefore a continued dialogue between scientists and policy makers.

5.2 It is essential that all parties to any Convention and related legal instruments should, under its obligations, participate fully in the free exchange and flow of information necessary for the development and technical input of the convention. Such a convention should include a technical annex to provide for:

- International co-operation in research, systematic observation and exchange of related information;
- Adjustments based on up-dates of scientific knowledge;
- Strengthening national scientific and environmental capabilities of developing countries.

Office of Science and Technology Policy
Executive Offices of the President

Second World Climate Conference
Geneva, Switzerland

Daily Summary Report

11/5/90 - TV

To: D. Allan Bromley
Ken Yale

From: N. G. Maynard

Subject: SWCC - Draft Ministerial Declaration

11 pages follow

Draft Ministerial Declaration

[Phone call to follow fax]

5 November 1990

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DRAFT MINISTERIAL DECLARATION

PREAMBLE

1. We, the Ministers from countries representing the world community met in Geneva, Switzerland, from 6 to 7 November 1990 at the Second World Climate Conference.
2. We note that while climate has varied in the past and there is still a large degree of scientific uncertainty, the rate of climate change predicted by the Intergovernmental Panel on Climate Change (IPCC) to occur over the next century is unprecedented. This is due mainly to the continuing accumulation of greenhouse gases, resulting from a host of human activities since the industrial revolution, hitherto particularly in developed countries. The potential impact of such climate change could pose an environmental threat of an up to now unknown magnitude; and could jeopardize the social and economic development of some areas. It could even threaten survival in some small island States and in low-lying coastal, arid and semi-arid areas.
3. We appreciate the work of the World Climate Programme (WCP) during the past decade which has improved understanding of the causes, processes and effects of climate and climate change. We also congratulate the IPCC, established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) on its First Assessment Report on Climate Change. It has identified causes and possible effects and strategies to limit and adapt to climate change, and in the light of the United Nations General Assembly resolutions, has identified possible elements for inclusion in a framework convention on climate change.
4. Recognizing climate change as a common concern of mankind, we commit ourselves and intend to take active and constructive steps in a global response, without prejudice to sovereignty of States.

I. GLOBAL STRATEGY

5. Recognizing that climate change is a global problem of unique character and taking into account the remaining uncertainties in the field of science, economics and response options, we consider that a global response, while ensuring sustainable development (1) of all countries, must be decided and implemented without further delay based on the best available knowledge such as that resulting from the IPCC assessment. Recognizing further that the principle of equity and the common but differentiated responsibility of countries should be the basis of any global response to climate change, developed countries must take the lead. They must all commit themselves to actions to reduce their major contributions to the global net emissions and enter into and strengthen co-operation with developing countries to enable them to adequately address climate change without hindering their national development goals and objectives. Developing countries must, within the limits feasible, taking into account the problems regarding the burden of external debt and their economic circumstances, commit themselves to appropriate action in this regard. To this end, there is a need to meet the requirements of developing countries, that adequate and additional financial resources be mobilised and the best available environmentally-sound technologies be transferred expeditiously on a fair and most favourable basis.

II. POLICY CONSIDERATIONS FOR ACTION

6. We reaffirm that, in order to reduce uncertainties, to increase our ability to predict climate and climate change on a global and regional basis, including early identification of as yet unknown climate-related issues, and to design sound response strategies, there is a need to strengthen national, regional and international research activities in climate, climate change and sea level rise. We recognize that commitments by governments are essential to sustain and strengthen the necessary research and monitoring programmes and the exchange of relevant data and information, with due respect to national sovereignty. We stress that special efforts must be directed to the areas of uncertainty as identified by the IPCC.

(1) Statement of sustainable development as agreed at the 15th session of UNEP Governing Council (Annex II UNEP/GC 15/L.37).

We maintain that there is a need to intensify research on the social and economic implications of climate change and response strategies. We commit ourselves to promoting the full participation of developing countries in these efforts. We recognize the importance of supporting the needs of the World Climate Programme, including contributions to the WMO Special Fund for Climate and Atmospheric Environmental Studies. The magnitude of the problem being addressed is such that no nation can tackle it alone and we stress the need to strengthen international cooperation. In particular, we invite the 11th Congress of the World Meteorological Organization, in the formulation of plans for the future development of the World Climate Programme, to ensure that the necessary arrangements are established in consultation with UNEP, UNESCO (and its IOC), FAO, ICSU and other relevant international organisations for effective coordination of climate and climate change related research and monitoring programmes. We urge that special attention be given to the economic and social dimensions of climate and climate change research.

7. In order to achieve sustainable development in all countries and to meet the needs of present and future generations, precautionary measures to meet the climate challenge must anticipate, prevent, attack, or minimize the causes of, and mitigate the adverse consequences of, environmental degradation that might result from climate change. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent such environmental degradation. The measures adopted should take into account different socio-economic contexts.

8. The potentially serious consequences of climate change, including the risk for survival in low-lying and other small island States and in some low-lying coastal, and arid and semi-arid areas of the world, give sufficient reasons to begin by adopting response strategies even in the face of significant uncertainties.

Such response strategies include phasing out the production and use of CFC's, efficiency improvements and conservation in energy supply and use, appropriate measures in the transport sector, sustainable forest management, afforestation schemes, developing contingency plans for dealing with climate related emergencies, proper land use planning, adequate coastal zone management, review of intensive agricultural practices and the use of [safe and] cleaner energy sources with lower or no emissions of [carbon dioxide and other] greenhouse gases, paying special attention to new and renewable sources.

Further actions should be pursued in a phased and flexible manner on the basis of medium and long-term goals and strategies and at the national, regional or global level, taking advantage of scientific advances and technological developments to meet both environmental and economic objectives.

9. We note that per capita consumption patterns in certain parts of the world along with a projected increase in world population are contributing factors in the projected increase in greenhouse gases.
10. We agree that the ultimate global objective should be to stabilize greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with climate.
11. We stress, as a first step, the need to stabilize, while ensuring sustainable development of the world economy, emissions of greenhouse gases not controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer. Contributions should be equitably differentiated according to countries' responsibilities and their level of development. In this context, we acknowledge efforts already undertaken by a number of countries to meet this goal.

12.

Taking into account that the developed world is responsible for about 3/4 of all emissions of greenhouse gases, we welcome the decisions and commitments [undertaken by many developed countries and a regional economic integration organization] [undertaken by the European Community with its Member States, Australia, Austria, Canada, Finland, Japan, New Zealand, Norway, Sweden, Switzerland, and other developed countries] to take actions aimed at stabilizing their emissions of CO₂, or CO₂ and other greenhouse gases not controlled by the Montreal Protocol, by the year 2000 in general at 1990 level, yet recognizing the differences in approach and in starting point in the formulation of the above targets. [We also acknowledge the initiatives of the United States which will have significant effects on limiting emissions of greenhouse gases.] We urge other developed countries to establish targets and/or feasible national programmes or strategies which will have significant effects on limiting emissions of [CO₂ and other] greenhouse gases not controlled by the Montreal Protocol.

We acknowledge, however, that those developed countries with as yet relatively low energy consumption (measured on a per capita or other appropriate basis) which can be reasonably expected to grow, and some countries with economies in transition, may establish targets, programmes and/or strategies that accommodate socio-economic growth, while improving the energy efficiency of their economic activities.

13.

We urge developed countries, before the 1992 UN Conference on Environment and Development, to analyze the feasibility of and options for, and, as appropriate in light of these analyses, to develop programmes, strategies and/or targets for a staged approach for achieving reductions of [CO₂ and other] greenhouse gas emissions not controlled by the Montreal Protocol, over the next two decades and beyond.

14.

We recommend that in the elaboration of response strategies, over time, all greenhouse gases, sources and sinks be considered in the most comprehensive manner possible and also that limitation and adaptation measures be addressed.

15. We recognize that developing countries have as their main priority alleviating poverty and achieving social and economic development and that their net emissions must grow from their, as yet, relatively low energy consumption to accommodate their development needs. Narrowing the gap between the developed and the developing world would provide a basis for a full partnership of all nations and would assist the developing countries in dealing with the climate change issue. To enable developing countries to meet incremental costs required to take the necessary measures to address climate change and sea-level rise, consistent with their development needs, we recommend that adequate and additional financial resources should be mobilized and best available environmentally sound technologies transferred expeditiously on a fair and most favourable basis. Developing countries also should, within the limits feasible, take action in this regard.
16. The specific difficulties of those countries, particularly developing countries, whose economies are highly dependant on fossil fuel production and exportation, as a consequence of action taken on limiting greenhouse gas emissions, should be taken into account.
17. We recommend that consideration should be given to the need for funding facilities, including the proposed World Bank/UNEP/UNDP Global Environmental Facility, a clearing house mechanism and a new possible international fund composed of adequate additional and timely financial resources and institutional arrangements for developing countries; taking into account existing multilateral and bilateral mechanisms and approaches. Such funding should be related to the implementation of the framework convention on climate change and any other related instruments that might be agreed upon. In the meantime, developed countries are urged to co-operate with developing countries to support immediate action in addressing climate change including sea-level rise without imposing any new conditionality on developing countries.
18. We recommend further that resources be assessed. Such assessments, to be conducted as soon as possible, should include country studies and mechanisms to meet the financing needs identified, taking note of the approaches developed under the Montreal Protocol.

19. Financial resources channelled to developing countries should, inter alia, be directed to:
- (i) Promoting efficient use of energy, development of lower and non-greenhouse gas emitting energy technologies and paying special attention to safe and clean new and renewable sources of energy;
 - (ii) Arranging expeditious transfer of the best available environmentally sound technology on a fair and most favourable basis to developing countries and promoting rapid development of such technology in these countries;
 - (iii) Co-operating with developing countries to enable their full participation in international meetings on climate change;
 - (iv) Enhancing atmospheric, oceanic and terrestrial observational networks, particularly in developing countries, to facilitate conducting research, monitoring and assessment of climate change and the impact on those countries;
 - (v) Rational forest management practices and agricultural techniques which reduce greenhouse gas emissions;
 - (vi) Enhancing the capacity of developing countries to develop programs to address climate change, including research and development activities and public awareness and education.

Funding should also be directed to the creation of regional centres to organize information networks on climate change in developing countries.

20. Appropriate economic instruments may offer the potential for achieving environmental improvements in a cost-effective manner. The adoption of any form of economic or regulatory measures would require careful and substantive analyses. We recommend that relevant policies make use of economic instruments appropriate to each country's socio-economic conditions in conjunction with a balanced mix of regulatory approaches.

21. We note that energy production and use account for nearly half of the enhanced radiative forcing resulting from human activities and is projected to increase substantially in the absence of appropriate response actions. We recognize the promotion of energy efficiency as the most cost-effective immediate measure, in many countries, for reducing energy-related emissions of greenhouse gases, [in particular CO₂] while other [safe] options such as no or lower greenhouse gas emitting energy sources should also be pursued. These principles apply to all energy sectors. Transport energy use attracts special attention of many of us in the light of its role in many developed countries and of its expected importance in many developing countries.
22. We recognize that there is no single quick-fix technological option for limiting greenhouse gas emissions. However, we are convinced that technological innovation as well as individual and social behaviour and institutional adaptations is a key element of any long-term strategy that deals with climate change in a way that meets the goal of sustainable development. Therefore, we urge all countries, the developed countries in particular, to intensify their efforts and international cooperation in technological research, development and dissemination of appropriate and environmentally sound technologies, including the reassessment and improvement of existing technologies and the introduction of new technologies.
23. We urge that environmentally sound and safe technologies be utilized by all sectors in all countries to the fullest extent possible and further urge all countries, developed and developing, to identify and take effective measures to remove barriers to the dissemination of such technologies. To this end, the best available environmentally sound and safe technologies should be transferred to developing countries expeditiously on a fair and most favourable basis.

24. We note that the conservation of the world's forests in their role as reservoirs of carbon along with other measures are of considerable importance for global climatic stability, keeping in mind the important role of forests in the conservation of biological diversity and the protection of soil stability and of the hydrological system. We recognize the need to reduce the rate of deforestation in consonance with the objective of sustained yield development and to enhance the potential of the world's forests through improved management of existing forests and through vigorous programmes of reforestation and afforestation, and to support financially the developing countries in this regard through enhanced and well-coordinated international cooperation including strengthening Tropical Forest Action Plan (TFAP) and International Tropical Timber Organization (ITTO). We recommend that the protection and management of boreal, temperate, sub-tropical and tropical forest ecosystems must be well-coordinated and preferably compatible with other possible types of action related to reduction of emission of greenhouse gases, rational utilisation of biological resources, provision of financial resources, and the need for more favourable market conditions for timber and timber products. The developing countries should be able to realize increased revenue from these forests and forest products.
25. We also recognize that forests and forest products play a key social and economic role in many nations and communities. We recognize that States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

26. We recommend that appropriate precautionary and control measures be developed and implemented at regional, sub-regional and country levels as appropriate to counter the increasing degradation of land, water, genetic and other productive resource bases by drought, desertification and land degradation.

Observatories on climate and climate change and observatories on ecosystems should be encouraged to work together on drought risks consequences.

Studies must be undertaken on drought and desertification.

We stress that stepped-up financial and scientific contributions be provided to facilitate these efforts.

27. We recommend that similar measures be adopted to address the particular problems and needs, including funding, of low-lying coastal and small vulnerable island countries, some of whose very existence is placed at risk by the consequences of climate change.

III. GLOBAL FRAMEWORK CONVENTION ON CLIMATE CHANGE

28. We call for negotiations on a framework convention on climate change to begin without delay after a decision is taken by the 45th Session of the General Assembly of the United Nations recommending ways, means and modalities for further pursuing these negotiations. Taking note of all the preparatory work, particularly the recommendations adopted 26 September 1990 by the Ad hoc working group of government representatives and regional economic integration organizations to prepare for negotiations on a framework convention on climate change, we urge all countries and regional economic integration organizations to join in these negotiations and recognize that it is highly desirable that an effective framework convention on climate change, containing appropriate commitments, and any related instruments as might be agreed upon on the basis of consensus, be signed in Rio de Janeiro during the United Nations Conference on Environment and Development. We welcome the offer of the Government of the United States of America to host the first negotiating meeting. [We also welcome the invitations of Thailand and Italy to host workshops, respectively on the feasibility of forestry options, and on energy technologies and their transfer to developing countries.]

29. We recommend that such negotiations take account of the possible elements compiled by the IPCC, and that the framework convention on climate change be framed in such a way as to gain the support of the largest possible number of countries while allowing timely action to be taken. We reaffirm our wish that this convention contain real commitments by the international community. We stress, given the complex and multi-faceted nature of the problem of climate change, the need for new and innovative solutions including the need to meet the special needs of developing countries.
30. We believe that a well-informed public is essential for addressing and coping with as complex an issue as climate change, and the resultant sea-level rise, and urge countries, in particular, to promote the active participation at the national and when appropriate, regional levels of all sectors of the population in addressing climate change issues and developing appropriate responses. We also urge relevant United Nations organizations and programmes to disseminate relevant information with a view to encouraging as wide a participation as possible.

①

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

11/6/90

Dr. Bromley/Ken:

The following items have been faxed since 10/29/90.
To you + Ken:

- (1) Contact telephone #'s + fax #'s .
- (2) 5 ISSUES of the N60 publication "ECO" - each day as issued.
- (3) Draft Ministerial Declaration which we negotiated for 2 1/2 days (until 3:45 a.m. the last night)
- (4) The final report from the Science part of SWCC "Conference Statement - Scientific/Technical Sessions"
- (5) The Statement by the EC countries issued just prior to negotiations which set targets + timetable among all EC countries.
- (6) Speech by Margaret Thatcher at Ministerial this morning.
- (7) Speech by P.M. of Tuvalu (this a.m. at Min'l) in which she discusses a conversation with President Bush.
- (8) I have called almost every day to discuss materials - sometimes several times - to clarify (Ken)
- (9) Materials were faxed so that you would have them prior to your Senior Staff whenever possible - usually, ~ 7 a.m. your time -
- (10) 5 PAGES follow - GENERAL INFO

N. Maynard

These ²7 spoke to Ministerial
group this a.m.

Heads of State and Government

- H. M. King Hussein of Jordan
H. E. Arnold Koller, President of the Swiss Confederation
Rt. Hon. Margaret Thatcher, Prime Minister of the United Kingdom
H. E. Michel Rocard, Prime Minister of France
H. E. Fenech Adami, Prime Minister of Malta
H. E. Bikenibeu Paeniu, Prime Minister of Tuvalu

Executive Heads of Agencies

- Mr. Federico Mayor, Director-General of UNESCO
(United Nations Educational, Scientific and Cultural Organization)
Mr. Jan Martenson, Director-General of the United Nations Office at Geneva
Prof. Godwin O. P. Obasi, Secretary-General of WMO
(World Meteorological Organization)
Prof. J. W. Maurits la Rivière, Secretary-General, ICSU
(International Council of Scientific Unions)
Dr. Edouard Sacuma, Director-General of FAO
(Food and Agriculture Organization of the United Nations)
Mr. Maurice Strong, Secretary-General of UNCED. (United Nations Conference on
Environment and Development), and Representative of the Secretary-General of
the United Nations.
Dr. Mostafa Tolba, Executive-Director of UNEP
(United Nations Environment Programme)
Mr. Zou Jingmeng, President of WMO
(World Meteorological Organization)

5 November 1990

1800

(3)

LIST OF SPEAKERS AT
THE MINISTERIAL SESSION OF SWCC

*(in order of sign-up + to accomodate
ministers leaving early)*

To speak 11/6 and 11/7

- | | | |
|-------------|-----|--------------------------|
| | 1. | Yemen Arab Republic |
| | 2. | Finland |
| | 3. | Indonesia |
| | 4. | Australia |
| | 5. | Mozambique |
| | 6. | Italy |
| | 7. | The Netherlands |
| | 8. | China |
|) AUSTRIA → | 9. | Germany |
| | 10. | New Zealand |
| | 11. | Singapore |
| | 12. | Sweden |
|) NORWAY → | 13. | Argentina |
| | 14. | Switzerland |
| | 15. | Austria USSR |
| | 16. | Mexico |
| | 17. | France |
| SELE → | 18. | The Netherlands Antilles |
| | 19. | Hungary |
| | 20. | Denmark |
| | 21. | Turkey |
| | 22. | Ethiopia |
| | 23. | USSR |
| | 24. | Tanzania |
| | 25. | Romania |
| | 26. | United Kingdom |
| | 27. | Yugoslavia |
| | 28. | Thailand |
| | 29. | Brazil |
| | 30. | (Norway) |
| | 31. | Japan |
| | 32. | Philippines |
| | 33. | Bangladesh |

(4)

(b)

IRELAND

- 35. Republic of Korea
36. Poland
37. Canada
38. Guinea
39. Zimbabwe
40. Central African Republic
41. Guinea-Bissau
42. Syrian Arab Republic
43. Egypt
44. Kiribati
45. Greece
46. USA
47. Spain
48. Mauritius
49. Maldives
50. Nicaragua
51. Morocco
52. Korea
53. Tunisia
54. Chile
55. (~~Ireland~~)
56. Malaysia
57. Jordan
58. Grand Duché de Luxembourg
59. Iceland
60. Botswana
61. Nigeria
62. Burundi
63. ~~Argentina~~ Bulgaria
64. Jamaica
65. Senegal
66. Fiji
67. Cameroon
68. Nepal
69. Algeria
70. Venezuela
71. Trinidad & Tobago
72. Uganda
73. Kenya
74. Portugal
75. Zambia
76. Pakistan
77. Lesotho
78. Saudi Arabia
79. Israel
80. Cuba

UPDATE**Day 9 - Tuesday 6 November****OPENING CEREMONY FOR MINISTERIAL SESSIONS**

10:00 - 13:00 STATEMENT ON BEHALF OF THE SPONSORING AGENCIES
WELCOMING ADDRESS BY THE PRESIDENT OF SWITZERLAND
ADDRESSES BY HEADS OF STATE AND GOVERNMENT
STATEMENT OF THANKS ON BEHALF OF THE SPONSORING AGENCIES

13:00 - 15:00 Lunch

FIRST MINISTERIAL SESSION

15:00 - 18:00 Election of Chairman
Adoption of the Agenda
Election of Members of the Bureau

ADDRESS BY THE SECOND WORLD CLIMATE CONFERENCE
CHAIRMAN, ON THE RESULTS OF THE SCIENTIFIC/TECHNICAL SESSIONS
OF THE CONFERENCE

STATEMENT BY THE EXECUTIVE DIRECTOR OF UNEP

STATEMENT BY THE SECRETARY GENERAL OF UNCED

STATEMENT BY A YOUTH REPRESENTATIVE

TWO STATEMENTS BY NON-GOVERNMENTAL ORGANIZATIONS

STATEMENTS BY HEADS OF NATIONAL DELEGATIONS

UPDATE

⑥
Day 10 - Wednesday 7 November

SECOND MINISTERIAL SESSION

10:00 - 13:00 STATEMENTS BY HEADS OF NATIONAL DELEGATIONS

13:00 - 15:00 Lunch

CLOSING SESSION

15:00 - 16:00 STATEMENTS BY HEADS OF NATIONAL DELEGATIONS

16:30 - 18:00 ADOPTION OF DECLARATION AND REPORT

18:15 PRESS CONFERENCE

SECOND WORLD CLIMATE CONFERENCE CHAIRMAN

CHAIRMAN OF MINISTERIAL SESSIONS OF THE CONFERENCE

EXECUTIVE HEADS OF THE SPONSORING AGENCIES:

- WORLD METEOROLOGICAL ORGANIZATION (WMO)
- UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)
- UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION (UNESCO) AND ITS INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (IOC)
- FOOD AND AGRICULTURE ORGANIZATION (FAO)
- INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS (ICSU)

PLEASE CHECK AGAINST DELIVERY

Maynard
11/6/90

NOT FOR PUBLICATION, BROADCAST OR USE ON CLUB TAPES
BEFORE 11.15 LOCAL TIME ON TUESDAY 6 NOVEMBER 1990

For:
DR. Bromley or *Ken Gall*

TEXT OF A SPEECH

MADE BY THE PRIME MINISTER

THE RT HON MARGARET THATCHER FRS MP

AT THE SECOND WORLD CLIMATE CONFERENCE

IN GENEVA

ON

TUESDAY 6 NOVEMBER 1990

PRIME MINISTER'S OFFICE
10 DOWNING STREET
WHITEHALL
LONDON
SW1A 2AA

[Introduction]

Mr. Chairman, Your Majesty, President Koller, Distinguished Colleagues, Your Excellencies, Ladies and Gentlemen,

May I begin by thanking Heads of Agencies and Organisations for sponsoring this Second World Climate Conference, and indeed all those connected with it. It is a most important event for all our countries and I wish you success in your endeavours.

Mr. Chairman, since the last World War, our world has faced many challenges, none more vital than that of defending our liberty and keeping the peace. Gradually and painstakingly we have built up the habit of international cooperation, above all through the United Nations. The extent of our success can be seen in the Gulf, where the nations of the world have shown unprecedented unity in condemning Iraq's invasion and taking the measures necessary to reverse it.

But the threat to our world comes not only from tyrants and their tanks. It can be more insidious though less visible. The danger of global warming is as yet unseen, but real enough for us to make changes and sacrifices, so that we do not live at the expense of future generations.

Our ability to come together to stop or limit damage to the world's environment will be perhaps the greatest test of how far we can act as a world community. No-one should under-estimate the imagination that will be required, nor the scientific effort, nor the unprecedented co-operation. We shall have to show statesmanship of a rare order. It's because we know that, we are here today.

[Man and Nature: out of balance]

For two centuries, since the Age of Enlightenment, we assumed that whatever the advance of science, whatever the economic development, whatever the increase in human numbers, the world would go on much the same. It was progress. And that was what we wanted.

Now we know that this is no longer true.

We have become more and more aware of the growing imbalance between our species and other species, between population and resources, between humankind and the natural order of which we are part.

In recent years, we have been playing with the conditions of the life we know on the surface of our planet. We have cared too little for our seas, our forests and our land. We have treated the air and the oceans like a dustbin. We have come to realise that man's activities and numbers threaten to upset the biological balance which we have taken for granted and on which human life depends.

We must remember our duty to Nature before it is too late. That duty is constant. It is never completed. It lives on as we breathe. It endures as we eat and sleep, work and rest, as we are born and as we pass away. The duty to Nature will remain long after our own endeavours have brought peace to the Middle East. It will weigh on our shoulders for as long as we wish to dwell on a living and thriving planet, and hand it on to our children and theirs.

- 4 -

[The need for environmental diplomacy]

We are all aware of the immense challenge. The enormity of the task is not a matter for pessimism. The problems which science has created science can solve, provided we heed its lessons. Moreover, we have already established a structure of international co-operation on the environment to deal with ozone depletion. For the first time ever, rich and poor nations alike set out together to save our planet from a serious danger. This painstaking work culminated in the historic agreement reached in London this year. That agreement is a real beacon of hope for the future.

The main focus in London was on protecting the ozone layer. But the agreement will have other consequences. We should not forget that CFCs are 10,000 times more powerful, molecule for molecule, than carbon dioxide as agents of global warming. But of the other greenhouse gases, carbon dioxide is by far the most extensive and contributes around half the manmade greenhouse warming. All our countries produce it. The latest figures which I have seen show that 26 per cent comes from North America, 22 per cent from the rest of the OECD, 26 per cent from the Soviet Union and Eastern Europe and 26 per cent from the less developed countries.

These figures underline why a joint international effort to curb greenhouse gases in general and carbon dioxide in particular is so important. There is little point in action to reduce the amounts being put into the atmosphere in one part of the world, if they are promptly increased in another. Within this framework the United Kingdom is prepared, as part of an international effort including other leading countries, to set itself the demanding target of bringing carbon dioxide emissions back to this year's level by the year 2005. That will mean reversing a rising trend before that date.

The European Community has also reached a very good agreement to stabilise emissions. I hope that Europe's example will help the task of securing world-wide agreement.

Targets on their own are not enough. They have to be achievable. Promises are easy. Action is more difficult. For our part, we have worked out a strategy which sets us on the road to achieving the target. We propose ambitious programmes both to promote energy efficiency and to encourage the use of cleaner fuels.

We now require, by law, that a substantial proportion of our electricity comes from sources which emit little or no carbon dioxide. That includes a continuing important contribution from nuclear energy.

Such measures as these - which increasing numbers of countries are adopting - should be seen as part of the premium on that insurance policy which I mentioned. They buy us protection against the hazards of the future: but they also pay dividends even though the gloomier predictions about global warming are not fulfilled - dividends such as less air pollution, lowered acid rain, reduced energy costs.

- 2 -

[The importance of research]

I want to pay tribute to the important work which the United Nations has done to advance our understanding of climate change, and in particular the risks of global warming. Dr. Tolba and Professor Obasi deserve our particular thanks for their far-sighted initiative in establishing the Intergovernmental Panel on Climate Change.

The IPCC report is a remarkable achievement. It is almost as difficult to get a large number of distinguished scientists to agree, as it is to get agreement from a group of politicians. As a scientist who became a politician, I am perhaps particularly qualified to make that observation!

Of course, much more research is needed. We do not yet know all the answers. Some major uncertainties and doubts remain. No-one can yet say with certainly that it is human activities which have caused the apparent increase in global average temperatures. The IPCC report is very careful on this point. For instance, the total amount of carbon dioxide reaching the atmosphere each year from natural sources is some 600 billion tonnes, while the figure resulting from human activities is only 26 billion tonnes. In relative terms that is not very significant. Equally we know that the increases of carbon dioxide in the atmosphere date from the start of the industrial revolution. And we know that those concentrations will continue to rise if we fail to act.

Nor do we know with any precision the extent of the likely warming in the next century, nor what the regional effects will be. We cannot be sure of the role of clouds.

There is a continuing mystery about how atmospheric carbon, including the small extra contribution from human sources, is being absorbed: is most of it going into the ocean, as used to be thought? Or is it being increasingly absorbed by trees or plants, or soils, especially in the northern hemisphere? These are questions that need answers, sooner rather than later.

Global climate change within limits need not by itself pose serious problems - our globe has after all seen a great deal of climate change over the centuries. It is notable that the blue-green algae which dominated the Precambrian period at the dawn of life are still major components of the marine phytoplankton today. Despite the climate changes of many millions of years, these microbes have persisted on earth virtually unchanged, pumping out life-giving oxygen into the atmosphere and mopping up carbon dioxide.

The real dangers arise because climate change is combined with other problems of our age: for instance the population explosion;

- the deterioration of soil fertility;
- increasing pollution of the sea;
- intensive use of fossil fuel;
- and destruction of the world's forests, particularly those in the tropics.

- 3 -

Britain will continue to play a leading role in trying to answer the remaining questions, and to advance our state of knowledge of climate change. This year, we have established in Britain the Hadley Centre for Climate Prediction and Research for this purpose. We need to improve in particular our understanding of the effect of the oceans on our weather, improve too our capability to model climate change. I have seen for myself the outstanding work being done on both these subjects at the National Center for Atmospheric Research in Boulder, Colorado.

We must also make sure that research is carefully targeted. Too many people can do the same thing, and at the same time vital problems can be neglected. The task of global observation is immense. It will require a coordinated effort more ambitious than any attempted before, as the meeting of scientists and experts last week recognised.

[The need for precautionary action]

But the need for more research should not be an excuse for delaying much needed action. There is already a clear case for precautionary action at an international level. The IPCC tells us that we cannot repair the effects of past behaviour on our atmosphere as quickly and as easily as we might cleanse a stream. It will take, for example, until the second half of the next century, until the old age of my grandson, to repair the damage to the ozone layer above the Antarctic. And some of the gases we are adding to the global heat trap will endure in the Earth's atmosphere for just as long.

The IPCC tells us that, on present trends, the earth will warm up faster than at any time since the last ice age. Weather patterns could change so that what is now wet would become dry, and what is now dry would become wet. Rising seas could threaten the livelihood of that substantial part of the world's population which lives on or near coasts. The character and behaviour of plants would change, some for the better, some for worse. Some species of animals and plants would migrate to different zones or disappear for ever. Forests would die or move. And deserts would advance as green fields retreated.

Many of the precautionary actions that we need to take would be sensible in any event. It is sensible to improve energy efficiency and use energy prudently; sensible to develop alternative and sustainable sources of supply; sensible to replant the forests which we consume; sensible to re-examine industrial processes; sensible to tackle the problem of waste. I understand that the latest vogue is to call them 'no regrets' policies. Certainly we should have none in putting them into effect.

And our uncertainties about climate change are not all in one direction. The IPCC report is very honest about the margins of error. Climate change may be less than predicted. But equally it may occur more quickly than the present computer models suggest. Should this happen it would be doubly disastrous were we to shirk the challenge now. I see the adoption of these policies as a sort of premium on insurance against fire, flood or

Extended Page 1.3
other disaster. It may be cheaper or more cost-effective to take action now than to wait and find we have to pay much more later.

- 4 -

[The need for environmental diplomacy]

We are all aware of the immense challenge. The enormity of the task is not a matter for pessimism. The problems which science has created science can solve, provided we heed its lessons. Moreover, we have already established a structure of international co-operation on the environment to deal with ozone depletion. For the first time ever, rich and poor nations alike set out together to save our planet from a serious danger. This painstaking work culminated in the historic agreement reached in London this year. That agreement is a real beacon of hope for the future.

The main focus in London was on protecting the ozone layer. But the agreement will have other consequences. We should not forget that CFCs are 10,000 times more powerful, molecule for molecule, than carbon dioxide as agents of global warming. But of the other greenhouse gases, carbon dioxide is by far the most extensive and contributes around half the manmade greenhouse warming. All our countries produce it. The latest figures which I have seen show that 26 per cent comes from North America, 22 per cent from the rest of the OECD, 26 per cent from the Soviet Union and Eastern Europe and 26 per cent from the less developed countries.

These figures underline why a joint international effort to curb greenhouse gases in general and carbon dioxide in particular is so important. There is little point in action to reduce the amounts being put into the atmosphere in one part of the world, if they are promptly increased in another. Within this framework the United Kingdom is prepared, as part of an international effort including other leading countries, to set itself the demanding target of bringing carbon dioxide emissions back to this year's level by the year 2005. That will mean reversing a rising trend before that date.

The European Community has also reached a very good agreement to stabilise emissions. I hope that Europe's example will help the task of securing world-wide agreement.

Targets on their own are not enough. They have to be achievable. Promises are easy. Action is more difficult. For our part, we have worked out a strategy which sets us on the road to achieving the target. We propose ambitious programmes both to

- 5 -

Mr. Chairman, people may disagree about the effects of increased man-made carbon dioxide in the atmosphere. But everyone agrees that we should keep in healthy condition the forests and seas which absorb and utilise a large part of it here on earth. We would be wise to do that for other reasons too: for the beauty of the forests and the infinite variety of species which inhabit them, and to preserve the food chain and balance of nature in the sea.

That's why we want to contribute to conserving the world's forests, and to planting new ones. Trees help to reduce global warming. We intend to plant more at home: we have just announced our plans to replant one of the ancient forests of England - destroyed in an earlier phase of our history.

We shall offer our expertise and aid funds to help plant and manage forests elsewhere in the world, particularly in tropical countries. A year ago I told the United Nations General Assembly that the United Kingdom would aim to increase its funds for tropical forestry by £100m. We now have 150 projects underway in more than 30 countries.

Our aim is to give the people in those countries a better standard of living by conserving and using the forests than by cutting them down.

[The need for a Global Convention]

But our immediate task this week is to carry as many countries as possible with us, so that we can negotiate a successful framework convention on climate change in 1992. We must also begin work on the binding commitments that will be necessary to make the convention work.

To accomplish these tasks, we must not waste time and energy disputing the IPCC's report or debating the right machinery for making progress. The International Panel's work should be taken as our sign post; and the United Nations Environment Programme and the World Meteorological Organisation as the principal vehicles for reaching our destination.

We will not succeed if we are too inflexible. We will not succeed if we indulge in selfrighteous point-scoring for the benefit of audiences and voters at home. We have to work sympathetically together. We have to recognise the importance of economic growth of a kind that benefits future as well as present generations everywhere. We need it not only to raise living standards but to generate the wealth required to pay for protection of the environment.

It would be absurd to adopt policies which would bankrupt the industrial nations, or doom the poorer countries to increasing poverty. We have to recognise the widely different circumstances facing individual countries, with the better-off assisting the poorer ones as we agreed to do under the Montreal Protocol.

The differences can't be drafted away in that famous phrase so beloved of diplomats "a form of words". They need to be resolved by tolerant and sympathetic understanding of our

- 6 -

various positions. Some of us use energy more efficiently than others. Some of us are less dependent on fossil fuels. And we each have our own economic characteristics, resources, plans and hopes for the future. These are the realities that we must face if we are to move forward towards a successful conclusion to our negotiations in 1992.

Just as philosophies, religions and ideals know no boundaries, so the protection of our planet itself involves rich and poor, North and South, East and West. All of us have to play our part if we are to succeed. And succeed we must for the sake of this and future generations.

One of our great poets, George Herbert, in his poem on "Man" wrote this:

"Man is all symmetry,
Full of proportions, one limb to another, And all to all the
world besides;
Each part may call the farthest, brother; For head with foot
hath private amity,
And both with moons and tides."

We are, in symmetry with nature. To keep that precious balance, we need to work together for our environment. The United Kingdom will work with all of you in this cause -to save our common inheritance for generations yet to come.

[Introduction]

Mr. Chairman, Your Majesty, President Koller, Distinguished Colleagues, Your Excellencies, Ladies and Gentlemen,

May I begin by thanking Heads of Agencies and Organisations for sponsoring this Second World Climate Conference, and indeed all those connected with it. It is a most important event for all our countries and I wish you success in your endeavours.

Mr. Chairman, since the last World War, our world has faced many challenges, none more vital than that of defending our liberty and keeping the peace. Gradually and painstakingly we have built up the habit of international cooperation, above all through the United Nations. The extent of our success can be seen in the Gulf, where the nations of the world have shown unprecedented unity in condemning Iraq's invasion and taking the measures necessary to reverse it.

But the threat to our world comes not only from tyrants and their tanks. It can be more insidious though less visible. The danger of global warming is as yet unseen, but real enough for us to make changes and sacrifices, so that we do not live at the expense of future generations.

Our ability to come together to stop or limit damage to the world's environment will be perhaps the greatest test of how far we can act as a world community. No-one should under-estimate the imagination that will be required, nor the scientific effort, nor the unprecedented co-operation. We shall have to show statesmanship of a rare order. It's because we know that, we are here today.

[Man and Nature: out of balance]

For two centuries, since the Age of Enlightenment, we assumed that whatever the advance of science, whatever the economic development, whatever the increase in human numbers, the world would go on much the same. It was progress. And that was what we wanted.

Now we know that this is no longer true.

We have become more and more aware of the growing imbalance between our species and other species, between population and resources, between humankind and the natural order of which we are part.

In recent years, we have been playing with the conditions of the life we know on the surface of our planet. We have cared too little for our seas, our forests and our land. We have treated the air and the oceans like a dustbin. We have come to realise that man's activities and numbers threaten to upset the biological balance which we have taken for granted and on which human life depends.

We must remember our duty to Nature before it is too late. That duty is constant. It is never completed. It lives on as we breathe. It endures as we eat and sleep, work and rest, as we are born and as we pass away. The duty to Nature will remain long after our own endeavours have brought peace to the Middle East. It will weigh on our shoulders for as long as we wish to dwell on a living and thriving planet, and hand it on to our children and theirs.

- 2 -

[The importance of research]

I want to pay tribute to the important work which the United Nations has done to advance our understanding of climate change, and in particular the risks of global warming. Dr. Tolba and Professor Obasi deserve our particular thanks for their far-sighted initiative in establishing the Intergovernmental Panel on Climate Change.

The IPCC report is a remarkable achievement. It is almost as difficult to get a large number of distinguished scientists to agree, as it is to get agreement from a group of politicians. As a scientist who became a politician, I am perhaps particularly qualified to make that observation!

Of course, much more research is needed. We do not yet know all the answers. Some major uncertainties and doubts remain. No-one can yet say with certainty that it is human activities which have caused the apparent increase in global average temperatures. The IPCC report is very careful on this point. For instance, the total amount of carbon dioxide reaching the atmosphere each year from natural sources is some 600 billion tonnes, while the figure resulting from human activities is only 26 billion tonnes. In relative terms that is not very significant. Equally we know that the increases of carbon dioxide in the atmosphere date from the start of the industrial revolution. And we know that those concentrations will continue to rise if we fail to act.

Nor do we know with any precision the extent of the likely warming in the next century, nor what the regional effects will be. We cannot be sure of the role of clouds.

There is a continuing mystery about how atmospheric carbon, including the small extra contribution from human sources, is being absorbed: is most of it going into the ocean, as used to be thought? Or is it being increasingly absorbed by trees or plants, or soils, especially in the northern hemisphere? These are questions that need answers, sooner rather than later.

Global climate change within limits need not by itself pose serious problems - our globe has after all seen a great deal of climate change over the centuries. It is notable that the blue-green algae which dominated the Precambrian period at the dawn of life are still major components of the marine phytoplankton today. Despite the climate changes of many millions of years, these microbes have persisted on earth virtually unchanged, pumping out life-giving oxygen into the atmosphere and mopping up carbon dioxide.

The real dangers arise because climate change is combined with other problems of our age: for instance the population explosion;

- the deterioration of soil fertility;
- increasing pollution of the sea;
- intensive use of fossil fuel;
- and destruction of the world's forests, particularly those in

- 3 -

Britain will continue to play a leading role in trying to answer the remaining questions, and to advance our state of knowledge of climate change. This year, we have established in Britain the Hadley Centre for Climate Prediction and Research for this purpose. We need to improve in particular our understanding of the effect of the oceans on our weather, improve too our capability to model climate change. I have seen for myself the outstanding work being done on both these subjects at the National Center for Atmospheric Research in Boulder, Colorado.

We must also make sure that research is carefully targeted. Too many people can do the same thing, and at the same time vital problems can be neglected. The task of global observation is immense. It will require a coordinated effort more ambitious than any attempted before, as the meeting of scientists and experts last week recognised.

[The need for precautionary action]

But the need for more research should not be an excuse for delaying much needed action. There is already a clear case for precautionary action at an international level. The IPCC tells us that we cannot repair the effects of past behaviour on our atmosphere as quickly and as easily as we might cleanse a stream. It will take, for example, until the second half of the next century, until the old age of my grandson, to repair the damage to the ozone layer above the Antarctic. And some of the gases we are adding to the global heat trap will endure in the Earth's atmosphere for just as long.

The IPCC tells us that, on present trends, the earth will warm up faster than at any time since the last ice age. Weather patterns could change so that what is now wet would become dry, and what is now dry would become wet. Rising seas could threaten the livelihood of that substantial part of the world's population which lives on or near coasts. The character and behaviour of plants would change, some for the better, some for worse. Some species of animals and plants would migrate to different zones or disappear for ever. Forests would die or move. And deserts would advance as green fields retreated.

Many of the precautionary actions that we need to take would be sensible in any event. It is sensible to improve energy efficiency and use energy prudently; sensible to develop alternative and sustainable sources of supply; sensible to replant the forests which we consume; sensible to re-examine industrial processes; sensible to tackle the problem of waste. I understand that the latest vogue is to call them 'no regrets' policies. Certainly we should have none in putting them into effect.

And our uncertainties about climate change are not all in one direction. The IPCC report is very honest about the margins of error. Climate change may be less than predicted. But equally it may occur more quickly than the present computer models suggest. Should this happen it would be doubly disastrous were we to shirk the challenge now. I see the adoption of these policies as a sort of premium on insurance against fire, flood or other disaster. It may be cheaper or more cost-effective to take action now than to wait and find we have to pay much more later.

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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

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To: D. Allan Bromley, Ken Gale
From: N. Maynard

see also article on Pacific Summit

8 pp.

SECOND WORLD CLIMATE CONFERENCE NGO NEWSLETTER

eco



Eco has been published by Non-Governmental Environmental Groups at major international conferences since the Stockholm Environment Conference in 1972. This issue is produced cooperatively by groups attending the Second World Climate Conference 1990

TAKE IMMEDIATE ACTION SAY SWCC SCIENTISTS

By ECO Staff

More than 700 scientists from 120 countries yesterday released the strongest warning of its kind yet delivered to the world's politicians, when the Second World Climate Conference reported on its scientific and technical sessions in Geneva.

The scientific Report which is presented to Ministers meeting this week, goes much further than the Intergovernmental Panel on Climate Change which is in effect its predecessor, in calling for countries to take 'immediate action' to reduce risks of climate change, 'concluding' that 'technically and cost-effective opportunities' exist to reduce CO₂ emissions from many industrialised countries, and that 'remaining uncertainties must not be the basis for deferring societal response'.

The report reflects an even stronger scientific consensus than the IPCC that action on the

greenhouse effect is justified, stating: 'a clear scientific consensus has emerged on estimates of the range of global warming which can be expected during the 21st Century. If the increase of greenhouse gas concentrations is not limited, the predicted climate change would place stresses on natural and social systems unprecedented in the past 10,000 years'.

It adds: 'This conference concludes that, notwithstanding scientific and economic uncertainties, nations should now take steps towards reducing sources and increasing sinks of greenhouse gases... with the long term goal of halting the build-up of greenhouse gases at a level that minimizes risks to society and natural ecosystems'.

It also warns that because natural feedbacks which will increase global warming have been

- continued on back page, col 3

Pacific Summit: Bush 'Rejects' IPCC On Sea Level Rise

Sea-level rise is so uncertain that it poses minimal concern, President George Bush is understood to have told leaders of Pacific Island states last week. Bush addressed 10 Heads of State at an environment summit called to discuss global warming and the US facility to incinerate chemical weapons on Johnston Atoll.

The leaders pointed to the findings of the IPCC on sea level rise, and were perplexed when Bush rejected them, saying "My scientists are telling me something different to that".

News of the Bush statement has sent a wave of dismay through members of the US scientific community who were involved in the IPCC process. At the Second World Climate Conference Mr Jim Bruce of the Coordinating Committee

- continued on back page, col 1

US, USSR, SAUDIS GUT MINISTERIAL STATEMENT

By ECO Reporter

On the eve of the Ministerial portion of the Second World Climate Conference, the US, USSR and Saudi Arabian delegations led successful moves to gut a draft of the statement due to be adopted by politicians who start a three day meeting today, Monday.

Yesterday, at the same time as their scientists delivered a report saying immediate action should be taken on climate change, the major oil producers proposed deleting key sections on targets and dates for reducing greenhouse gases, from the draft Ministerial Statement. In negotiations taking place in the United Nations Palais, less than a kilometre from the scientific conference, Saudi Arabia, the US, USSR and

USA, supported by Canada, succeeded in removing reference to the 'Toronto Target' of a 20% cut in CO₂ emissions by 2005, adopted by a major conference in Canada in 1988.

"Speaking as a Canadian, I am ashamed at the complicity in helping the US water down the Ministerial declaration" said David McRobert of the Toronto-based Pollution Probe group. "The United States has turned its back on science — including its own researchers — and is working with the fossil fuel industries to block any meaningful action by the Ministers" said Alden Meyer of the US Union of Concerned Scientists. "It's appalling that the US has taken this retrograde position, given the certainty that the scientists have now provided" said Dan

CONTENTS

News	1,8
Interview:	
Dr Stephen Schneider	2
Interview: Prof Bert Bolin	3
Leader	4
Opinion and Analysis	4-5
The View from Tuvalu	5
Eco's Guide to US Policy	6
New Publication	7
NGO Profile	

...Arabia, the US, USSR and Becker of the Sierra Club.

Extended Page 2.1
INGO PROTHB 7

Léman 8

● *EFTA countries fall out over stabilisation - back page*
~ continued on back page, col 3

ISSUE NO 7 VOLUME LXXV PUBLISHED DAILY FREE OF CHARGE

Two Views on Science and Policy

Today, ECO carries two interviews with two of the major scientific figures involved with climate change issues, Professor Bert Bolin, Chairman of the IPCC, and Dr Stephen Schneider of the National Center for Atmospheric Research, who has worked on analysing the significance of climate models for some 15 years.

INTERVIEW

with Stephen Schneider
of the National Center for Atmospheric
Research in Boulder Colorado



"We've detected about an 0.5°C rise during the twentieth century record. That's certainly not a normal fluctuation — you might expect a century like that once in a millenium but it's certainly far less than even odds — a 50% probability — that it would occur by chance.

So we can already argue that something unusual has occurred."

"It's not a 'scientific certainty' in the sense of a traditional 99% probability — but what makes 99% appropriate for policy making?"

"Corporations spend trillions of dollars on the basis of economic estimates with no more than a 50%

probability. Why should the science community demand a 95% or 99% probability before their findings can be used to inform decisions? It's elitism of the worst kind."

"I like to say if there is a coin flip probability — 50:50 — of unprecedented global climatic change actually occurring, and that there is a 1 in 10 chance — Russian Roulette odds — of it turning out to have catastrophic impacts, then that's more than adequate to say we should slow down."

"...when you treat the environment as a sewer, something eventually stinks."

ECO What is the most important scientific development being reported at the Second World Climate Conference?

Schneider I don't want to be cynical but in truth there's very little that's scientifically new. Three main 'scientific' events have caught world imagination in the last decade. The discovery of the ozone hole — though not directly related to global warming served as a symbol of the fact that when you treat the environment as a sewer, something eventually stinks.

Secondly, there was the rising temperature trend — the record warm years in the 1980s. Of course, one record warm decade does not a greenhouse prove but the momentum of public opinion would have been much the less without it.

Thirdly, for the last 10 years the modelling community has worked its tail off trying to disprove the predictions of warming caused by greenhouse pollution, and has failed to do so. Nothing has really shaken the prediction of a $1.5\text{--}4.5^{\circ}\text{C}$ rise with doubling of CO_2 or equivalent. More recent models suggest $1.9\text{--}5.2^{\circ}\text{C}$. Without feedbacks they suggest 1.5°C .

ECO You published a table showing the time probably needed to resolve uncertainties. Do decision-makers understand the scientific process?

"Smoking Gun"

Schneider Consensus on the magnitude of the temperature effect is not only based on the models, it also depends on the temperature record, as Tom Wigley showed in the only original piece of climate science I saw presented at the meeting. We've detected about an 0.5°C rise during the twentieth

fluctuation — you might expect a century like that once in a millenium but it's certainly far less than even odds — a 50% probability — that it would occur by chance.

So we can already argue that something unusual has occurred. It's not proof of cause and effect, but certainly the fact that it has coincided with increasing greenhouse gas emissions and is within the expected range of the models, is suggestive. Intuitively, to me, it's close to a smoking gun.

The 99% certainty that scientists like before having high confidence will indeed take a decade or two more to achieve.

"Elitism of the Worst Kind"

ECO Do you think the generally understood 'criteria' of scientific proof are really very useful in dealing with such an issue?

Schneider It's not a 'scientific certainty' in the sense of a traditional 99% probability — but what makes 99% appropriate for policy making? People make decisions to get medical treatment or to buy health insurance for potential problems that are not established beyond doubt. Why should science be any different?

Corporations spend trillions of dollars on the basis of economic estimates with no more than a 50% probability. Why should the science community demand a 95% or 99% probability before their findings can be used to inform decisions? It's elitism of the worst kind.

I'm not saying we should exaggerate probabilities. What I do believe is that scientists should not claim they cannot talk to the public until there is a 95% probability — especially not as they rely on public funds.

ECO Is the scientific community getting its message reported properly?

Schneider Scientists are human beings. They hold world views. Mine is that we must take global collective action to help the world survive. Uncertainty by itself is no excuse for inaction. Others shed their scepticism at a higher degree of certainty than I do. I like to say if there is a coin flip probability — 50:50 — of unprecedented global climatic change actually occurring, and that there is a 1 in 10 chance — Russian Roulette odds — of it turning out to have catastrophic impacts, then that's more than adequate to say we should slow down.

Some others view 'world survival' as an abstract entity and regard their 'scientific purity' as most important. They fear society will resent them crying wolf if they turn out to be wrong. So they say nothing. Many scientists in fact make this decision without realising it is a value judgement.

Unlike journalists who lead with a headline, scientists lead with their caveats. There is an ethical double bind.

INTERVIEW

with Professor Bert Bolin
Chairman of the IPCC



while others take the 'world citizen' view, and describe dangerous possibilities.

But I think we don't require proof of scary scenarios to convince the world to take action. We need to attach odds to the various possibilities. I believe that suppressing a dangerous or scary possibility is as irresponsible as putting out a scary scenario without odds. If I'm only 10% certain that there's botulism in tonight's soup, that's enough to stop me from trying it. I don't need 99% probability.

Some lobbies or governments are parading an unrepresentative series of people with extreme views to mislead the public. They claim that the science is totally uncertain, but they never give any probabilities. That's misrepresentation.

"Does it really matter if there is a 10% or 50% chance of catastrophe?"

ECO How do environmental groups perform?
Schneider Unfortunately, some are like Sununu: they take things out of context or forget to mention odds. Everybody should tell the story probabilistically. The truth is bad enough. Does it really matter if there is a 10% chance of catastrophe? or 50%? We're not talking asteroid-collision-with-the earth odds here — its not as if there's only a thousandth or a millionth of a percent chance that a climate catastrophe will occur. We don't need to claim certainty for the evidence. That's only an invitation to discredit us.

Some in industry have been spreading confusion since the events of 1988. In the US some have used full page newspaper adverts to do so, making it no longer politically safe for most politicians to talk about the need for carbon taxes. They are raising what appear to be fundamental new questions about greenhouse science, but in fact they largely flaunt well known uncertainties. They are beating us with our own caveats and pretending they invented them.

The public often falls for it because they misunderstand the nature of the scientific process, debate and doubt. The media enjoys polarised debate because they like a conflict. Politicians can use the debate as they like.

ECO Would you comment on President Bush's position?

Schneider I suspect that his Chief of Staff John Sununu doesn't let a representative spectrum of climate scientists get near the Oval Office. The President apparently only hears unknowledgeable or extreme people. Neither Bolin nor Hansen nor myself have spoken with him. I doubt he gets balanced information on global warming or he'd join the Margaret Thatcher, and other 'conservative' leaders, who counsel at least some immediate action to counter the greenhouse effect.

● Dr Schneider is author of *Global Warming*.

"We don't understand the carbon cycle adequately today. We can only account for where about 80% of the emissions go.

How can we be sure that the same fraction will stay in the atmosphere? If 50 or 60% stays in the atmosphere of a warmer world, that will mean concentrations rising at twice the present rate. I think it is most likely that accumulation will go more quickly in future than less quickly."

ECO You have received a prize for your work during this Conference, and have become an international public figure as a result of your work with the IPCC: what do you feel about that?

Bolin It's unimportant what I feel as an individual — I do feel very engaged in the issue. Engaged in trying to steer a way between extremes on either side of the argument in this business.

ECO The science-policy interaction seems a very difficult area. Working Group I's report was very well received, II and III less so, do you think there is now a problem with communicating the nature of uncertainty to people?

Bolin All three Reports were well received. There is naturally a tendency among researchers to talk about their own research and to interpret it in terms of policies. That is a major step and many don't recognize it. A single scientific voice is not very important. It may even be counter-productive.

I'm not saying that scientists should keep quiet but it is important to sift out what we really are able to say with certainty, with confidence.

"Journalist Problem"

ECO Is there a problem with journalists not wanting to hear about what we don't know, even though that may in itself be important scientifically?

Bolin Journalists are a major problem. Very major. I recently gave a long interview to a daily newspaper in Sweden and the journalist then talked with Professor Budeko, who said that he thought a warmer world would be a better world. She wrote that, and it is correct, he does think that. But that was all she wrote, which was very misleading. They take a small point and make that seem to be 'the issue'.

Journalists put about wild exaggerations which naturally scare people. There may be an utterly small chance that things turn out in such a way. We don't need to scare people, instead we must bring home to them that we face a serious issue in the future development of our world, and set in train a process of collaborative action, involving those who have influence.

"30-40 Years"

ECO what about environmental groups, what do you think of their work?

Bolin Generally they do a good job but there are a lot of battles going on over issues that are a lot of central importance. From the 'green' side there are many — and I admire the engagement of those people — who create such battles. How would one go about convincing people to take real action to reduce their CO₂ emissions for example. That is a practical question, and one which extreme green groups do not want to address.

Drive the car less, economise on heating but what else can you do? Very little: we have built a society which depends on cheap energy — you can't change that in less than 30-40 years.

If you ask 100 people in the US if they would do the things really required to achieve the reductions described in Working Group I, 90% would say no.

No single country would accept those things in the next 10 years.

Severe measures would also create unrest and conflict: then what has been achieved? Politicians who advocate such measures will get kicked out of office. Greens ignore that aspect of the problem.

ECO The conference has heard a lot about feedbacks: which do you think is likely to be the most important?

Bolin The most important is water vapour. That is crucial and work on it is reasonably well in hand.

The surprises I referred to earlier this week involve CO₂. Concentrations in the atmosphere have been steadily increasing.

century record. That's certainly not a normal

as an ethical double bind; some
scientists want to stress the uncertainties,

ISSUE 7 - NOV 7

published by the Sierra Club 1989, Lutterworth
and Vintage 1990

confidence. We need to say what we are
uncertain about, what we are certain of and,
what we don't know.

Extended Page 4.1
only around 40% of the total emissions? We
don't understand the carbon cycle adequately
- continued on page 7

eco

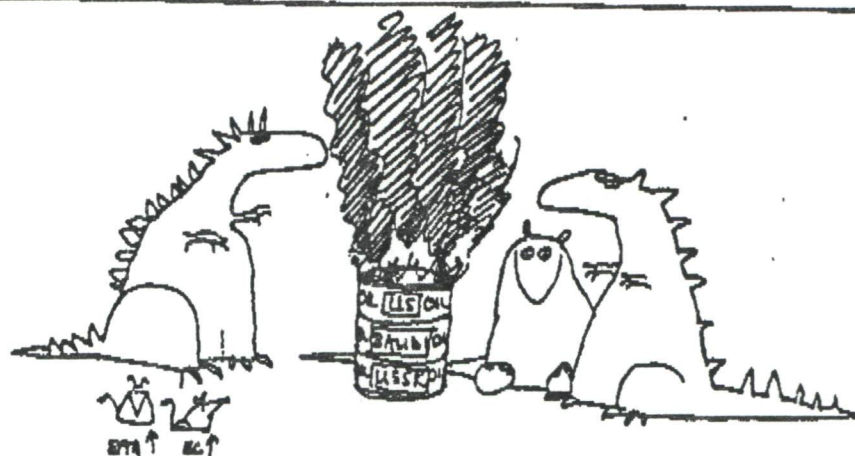
SEE NO LIMITS, HEAR NO SCIENCE, TAKE NO ACTION

The 747 scientists who penned the Science Report of the Second World Climate Conference have left politicians with little choice. They have called for immediate action. They have concluded that carbon dioxide reductions are technically (and economically) feasible, and proposed a cut of 1-2% a year. They have, most significantly, ruled out uncertainty as a justification for 'societal delay'.

The SWCC Science Report is a highly significant document. Twice as many scientists contributed to it as to the IPCC, and it reaches firmer, stronger conclusions, after taking on board the IPCC itself. It introduces the important priority of taking action to limit greenhouse pollution at levels which will prevent serious damage to human society and to ecosystems. For making that link we must thank the scientists who contributed to the Stockholm Environment Institute Report.

SWCC scientists may think there is no longer justification for delay but 'societal' means societies and although the people may share the scientist's concern, in practice it is governments who must act. Yet before the ink was dry on the science report we witnessed the unedifying spectacle of negotiators ignoring the science and preparing to do nothing, by gutting the draft Ministerial Declaration to remove talk of targets and dates. The US even enlisted Canada's help to try and trick the world into double-counting CFCs already controlled under the Montreal Protocol.

The US, USSR and Saudi Arabia, are now ignoring science to protect oil and



AS THE SECOND WORLD CLIMATE CONFERENCE DRAWS TO A CLOSE
DINOSAURS WARM THEIR PAYS AROUND THE SUNUNU CAMPFIRE

coal interests. All the computer models in the world will not make a Swiss Franc of difference to governments who simply want to sell all the oil the world can be persuaded to buy. Simple greed is now coming out in the open.

When science provided what sounded like convenient uncertainties, Mr Bush and his camp followers demanded more science. Now science is just being ignored. Other excuses

will be cooked up on Mr Sununu's campfire. The US, USSR and Saudi Arabia are like the three monkeys: see no limits, hear no science, take no action.

The oil nations are industrial dinosaurs that the world cannot afford. Environment groups only half jokingly refer to them as the 'forces of darkness'. If they are allowed to succeed, it could be the midnight oil that they are burning.

OPINION AND ANALYSIS

CO₂ Stabilisation Would Serve the US National Interest

By Brooks B. Yeager, Legislative Director,
Audubon Society

The actions that would be required to stabilize US CO₂ emissions would have considerable economic benefits which could help overcome the nation's serious economic problems. It would improve American oil security, help reduce the deficit, and strengthen the economy in world trade.

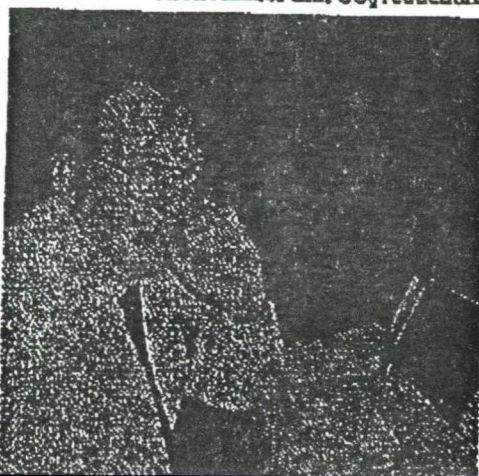
Yet as I write these words, there is no sign the Administration realizes that CO₂ reductions

are an opportunity not a problem. True, the US has real problems.

200,000 American soldiers are now encamped in the sands of Saudi Arabia, readying themselves for a conflict over the stability of a major portion of oil supply. The US economy is grinding to a halt, with analysts predicting that a severe recession may now be underway. The dollar seems to be in a chronic fall in currency markets, reflecting the declining position of the US in world trade. The Congress has only recently returned home for the November 6 General Election, and although Democratic leaders and the President managed to patch together a precarious budget deal, nobody believes the compromise will actually cure the long-term Federal deficit.

Meanwhile, the White House is steadfastly refusing to commit to any date by which it will stabilize CO₂ emissions, and US negotiators at the Second World Climate Conference Ministerial talks are blocking international calls for CO₂ action. The White House derides stabilization, implying it will be difficult to implement and that the cost impossible to support.

Is this bleak prospect true? Or is it rather that the White House is simply ignoring the



now ignoring science to protect oil and

that the White House, floundering in a host of problems seemingly beyond its control, is now

ISSUE 7 - NOV 7

1

OPINION AND ANALYSIS

rejecting the only long-term economic strategy that could really contribute to the gradual improvement of the economy?

A multitude of national economic studies, some of them funded by the US Government, now demonstrate the achievability of stabilization of CO₂ emissions at 1990 levels, at no economic cost. Such a program, which would, for instance, involve encouraging industry to achieve new process efficiencies, require greater automobile fuel economy, and facilitate the introduction of energy efficient appliances in the marketplace, would actually result in consumer savings totalling billions of dollars.

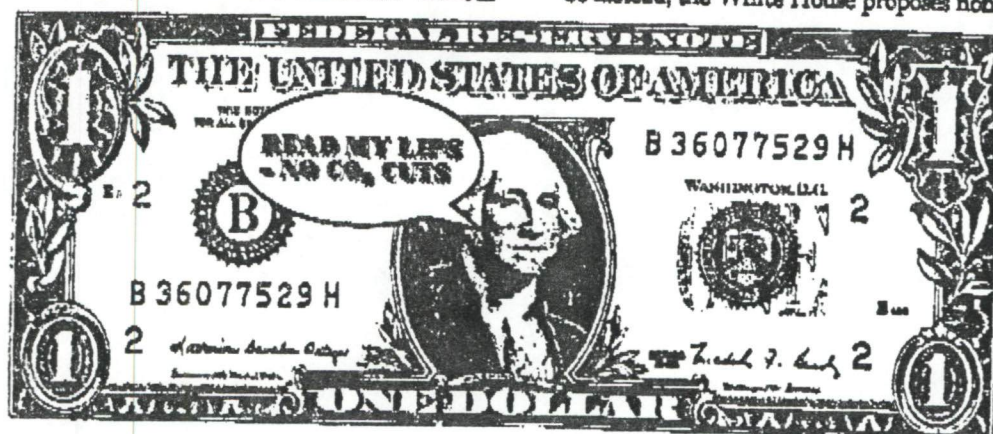
Because many of the savings would occur in the oil-greedy transportation sector, they would also contribute to the nation's long-term oil security, and lessen America's anxious

carbon tax, could encourage a more realistic market response for renewable sources of energy, perhaps even reviving the failing US solar industry, making another substantial dent in the deficit.

Non-Solutions

For the current resident of the White House, these multiple opportunities apparently look like threats. To support fuel economy, Mr. Bush would have to part ways with General Motors, Ford, and Chrysler. To impose a carbon tax, he would have to take on the coal industry, still licking its wounds from the Clean Air Act. To approve new regulatory standards, he would have to run against the traditional Republican abhorrence of government interference with the "free market."

So instead, the White House proposes non-



dependence on the Persian Gulf. Incentives for corporate investment in energy efficiency, such as conservation investment credits, could help the wasteful US industrial sector regain some of the efficiency ground lost in Japan and Germany, both of whom seem to have concluded that meeting the challenge of climate change can be economically beneficial. A phased-in

solutions. For oil security, drill the Arctic National Wildlife Refuge. For the deficit, raise taxes on beer, wine, and gasoline (but only five cents, mind you), and income taxes on the middle class. For our trade position... well, there simply aren't a lot of good ideas there. And for the climate? Do nothing, and hope the weather doesn't bite back.

NOT JUST A HORSE RACE

On Tuesday 6 November, up to 100,000 people are expected to gather, discuss and speculate on the outcome of an event of great uncertainty. Those gathering will be representing millions of their countrymen and women also interested in the outcome of the vent. The focus of speculation is the annual Melbourne Cup, a rich Australian horse race, run over 3,200 metres and with 21 starters.

Despite scientific assessment of power, carrying capacity and endurance, etc., the outcome cannot be predicted with confidence. In spite of claims of divine guidance or extrasensory perception by some, all who speculate are, in truth gamblers attempting to reduce the odds using a mixture of crude calculation, perception and the advice of spivs and touts of the horse-racing fraternity. At the end of the day there will be a few winners and many losers.

of the global community will also be assembling. Their charter will be to speculate on the Race for Life. Without divine guidance, extrasensory expertise in the physical dimensions of the problem they will be relying on the spiv and touts of the scientific community.

As with any horse race, the Race for Life is altered by human intervention. The stewards in Geneva will be meeting to find a common objective and to develop strategies that might be adopted to meet that objective.

Although idealism would have us hope that the stewards would alter the course of events such that we would all be winners, this is an impossible dream. However, if as the Race for Life unfolds human intervention directed by the stewards, perchance, produces an increasing proportion of winners, then the gathering in Geneva will be recognised as having been worth the effort.

THE VIEW FROM TUVALU

AN ARCHIPELAGO HAUNTED BY SEA LEVEL RISE, THE MALDIVES

By Abdullahi Majeed, Maldives Director of Meteorology
The Republic of Maldives lies in the equatorial calm of the northern Indian Ocean. The Maldives is an archipelago of 1190 small coral islands, most of which barely rise more than two metres above mean sea level. The country has a population of a little over 200,000. Two hundred islands are inhabited, with a total land area of 298 square kilometres strung over 90,000 square km of sea.

The Maldives had its first experience of global warming and sea level rise when almost one third of the country was hit by a tidal wave in April 1987. Malé, the capital island, which houses a quarter of the nation's population, suffered the worst of the ordeal. One fourth of the urban land was inundated by the salt water and 30% of the land reclaimed during the last seven years was completely washed away. The nation's sole international airport sustained extensive damage to its physical infrastructure and installations.

President Maumoon Abdul Gayoom of the Maldives brought the issue of the rising sea levels to the Commonwealth Summit in Vancouver 1987 and to the United Nations Conference on Environment and Development in 1987.

In November 1989, the Maldives hosted a conference on sea level rise among the small states of the world which are the most vulnerable to the phenomenon. The country is also mounting a campaign of public awareness among its citizens.

For a country like the Maldives, the IPCC projected sea level rise of one metre will be disastrous, if not fatal. We, like some other small island states would like to see all the countries of the world, especially the developed, stabilise the emissions of carbon dioxide and arrest the sea level rise. For a country, which emits very little carbon dioxide certainly does not wish to become a dinosaur of the 21st century nor be wiped out from the face of the earth due almost entirely to the actions of richer countries.

THE VIEW FROM TUVALU

the new wall and many others.

On the same day, on the other side of the globe in Geneva, a few hundred representatives

recognised as having been worth the effort.

By Bill Kinnmonth,

Member of the Australian Delegation



ECO GUIDE TO US POLICY

With the Ministerial Conference approaching, ECO introduces a short guide to US policy, in case delegates have trouble with lip reading.

The following is the official White House 'Talking Points' brief which was inadvertently released through NGOs at the Bergen Conference, where the US wanted to avoid even discussing carbon cuts. US policy has not changed much but ECO has added some new points the help policy development along.

TALKING POINTS
APRIL 17, 1990

- * The U.S. is taking environmentally responsible actions that make sense on their own merits that also help deal with global change issues.
- * The U.S. Conference is working in complement to the IPCC.
- * The world community is making great strides towards understanding the science of global change, but many fundamental questions remain unanswered.
- * The economic impacts of potential global changes and possible responses are not well understood--more work is needed.
- * Science, economics and policy formulation need to be integrated, so we can deal responsibly with global change.

DEBATES TO AVOID

- * NOT BENEFICIAL TO DISCUSS WHETHER THERE IS OR IS NOT WARMING, OR HOW MUCH OR HOW LITTLE WARMING. IN THE EYES OF THE PUBLIC WE WILL LOSE THIS DEBATE. A BETTER APPROACH IS TO RAISE THE MANY UNCERTAINTIES THAT NEED TO BE BETTER UNDERSTOOD ON THIS ISSUE.
- * DON'T GET INTO AN ADVOCACY POSITION OF THE MERITS OF VARIOUS POLICY PROPOSALS.
- * DON'T LET REPORTERS POSITION THIS CONFERENCE AS AN ATTEMPT TO DELAY SERIOUS DECISIONS ON THIS ISSUE.
- * THIS CONFERENCE IS ACCELERATING THE INTERNATIONAL DISCUSSION AND UNDERSTANDING OF THESE ISSUES. (DON'T USE SPECIFIC NUMBERS IE., DEGREES, DOLLARS, RATES ETC.)

The 'Talking Points' brief from Bergen

ECO's extra points for the US:

- * Avoid the use of the words 'climate', 'change', 'disaster', 'US' and 'responsibility', especially in that order.
- * Remember, your mother might like a warmer climate — cheaper vacations at home. Everyone has a mother, even 'Third World' delegates.
- * Most of the countries that will drown aren't worth invading anyway.

- * The right to have a big car is contained in the US Constitution (somewhere).
- * Only wimps like forests.
- * Who needs glaciers anyway? (Remember that all the ice used to be water in any case, and that melting is a natural process)
- * It took hundreds of years to prove that the earth wasn't flat; we've only been looking at this greenhouse thing for a decade or so (this will convince most scientists).
- * Although rats and bugs may prosper in a warmer climate more than elephants and rhinos, this will cut zoo feeding bills.
- * Don't use the phrase 'global warming', instead always refer to 'so-called measurements

of a claimed variation in certain atmospheric kinetic phenomena usually taken near earth's surface but as yet still poorly understood.

- * Don't talk to the press, foreign environmentalists, dogs or other 'p' (especially parrots) who may be wired hostile powers (avoid speaking close to or telephones, house plants, light fittings etc) anyone with facial hair (including on delegation).
- * Always remember, the Saudis are the good guys, the Russians used to be bad but are coming along, the Europeans can't be trusted and the rest of the world doesn't count.

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WHITEHOUSE BULLETIN

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THE WHITE HOUSE BULLETIN

BULLETIN BROADCASTING NETWORK, 209 CAMERON ST., ALEXANDRIA, VA 22314 (703) 684-3020
compromise on agriculture, ensuring the world's ability to grow enough food to feed the world's population. The probability of this is around 60-40."

- * A U.S. delegation led by NOAA Administrator John Knauss will take the message of "let's get serious in February" to the Second World Climate Conference in Geneva.

according to a number of involved Administration officials. The international conference -- which will begin with scientific discussions this Monday, with the ministerial session scheduled for November 6 and 7 -- will address the issue commonly referred to as global warming. During the Geneva meeting, the U.S. expects a number of Western European governments along with Japan to push strenuously for targets and timetables for greenhouse gas reductions, "as they have been doing at every international meeting in the last year." Japan will unveil its target to stabilize carbon dioxide emissions on a per-capita basis, in the year 2000 and beyond at about the same level as 1990. These expected pronouncements from other nations were criticized this morning by an involved Administration official: "While the Japanese position looks like stabilization at 1990, it is not. It is an 18% increase over 1988, steadily increasing as the population grows. Australia wants to reduce emissions of greenhouse gases by 20% by the year 2005, but this declaration is really no more than a feasibility study and has no legal significance unless adopted by the territories. France has set a stabilization target which is actually above its current emission level. The U.S. is not in favor of continued political statements in the form of declarations. This is all a shell game with these countries and they are not making legal commitments. Even the UK, which says it is going to stabilize to 1990 levels by 2005, seals its lips when you ask how long after 2005 they will hold at that level." While these nations are expected to push strongly at the end of the meeting for a declaration which includes targets, the U.S. negotiating position will be that the opening round of negotiations on a framework convention (scheduled for early February in Washington, D.C.) is the right time and setting for such discussions. The President's Science Advisor Allan Bromley recently chaired a meeting at which the instructions for the Knauss delegation were provided. The U.S. will issue a statement to the conference restating Secretary Baker's "no regrets policy." The statement will highlight progress that the U.S. has already made on the issue -- ORO reductions, the clean air act, the President's tree-planting initiative, energy-efficiency initiatives, as well as the leading role provided by the U.S. in providing climate-change research. According to one U.S. official, "These actions will bring the U.S. to 1987 levels of net greenhouse gas emissions by the year 2000, which is really better than the other nations are doing."

While reserving judgement, the White House is optimistic that the final language of the clean air bill will allow the President to sign it into law. According to one Administration official, "We haven't seen the final print yet, but in a private hearing on administration. The White House Bulletin referred to in ECO 5 and 6 is reproduced in full in the following pages of delegates."

ISSUE 7 - NOV 7

6

Bolin - continued from page 3

today. We can only account for where about 80% of the emissions go.

"More Quickly"

How can we be sure that the same fraction will stay in the atmosphere? If 50 or 60% stays in the atmosphere of a warmer world, that will mean concentrations rising at twice the present rate. I think it is most likely that accumulation will go more quickly in future than less quickly.

Another feedback question concerns the delays between emissions and temperature response. Delays are considerable but I think it is most likely that they will get shorter in future.

ECO You spoke this week of the northern carbon sink and its potential role in positive feedbacks: if a change does occur there, when will we know?

Bolin Nobody knows how to monitor it. It would be interesting to know what has happened to the tundra-taiga border over the past 50-100 years for example. That is an interesting point.

The progress of science is steady but if a major surprise occurs (such as the ozone hole), then we suddenly get a lot of new information.

ECO Are you disappointed by the position of countries such as the US and the UK, which have not even talked much about the statement of IPCC 1 which said that 60% reduction in CO₂ emissions is required to reach stabilisation. Do they accept the IPCC estimates concerning sea level rise and temperature?

Bolin The UK has now joined the Europeans. The US is another matter. I agree fully — on the other hand, in no other country has anyone looked completely into what the difficulties for taking action in a free market. I am disappointed by the recent US decision concerning cars (a decision in Senate not to raise the fuel efficiency of cars).

There is a tendency for politicians to view the practical problems most seriously with respect to their own country. It is important to broaden views more. In the United States Bill Reilly (in the US Administration) is well aware of what all this is about. As is Alan Bromly. It is obvious that the President may be looking at the next elections. He may not be fully aware of all the implications of this. Information is always sifted, and he does have a major responsibility to the Republicans, he can't change policy overnight. Perhaps it can change if he is re-elected.

ECO Has your faith in governments as a means of getting action on this issue increased or decreased as a result of your experiences in the IPCC process?

Bolin If information is brought forward, and if the scientific community is ready to act on it, then I think governments will act.

NGO PROFILE

The FORUM of Brazilian NGOs

Over 200 independent organizations have joined together to create the "FORUM of Brazilian non-governmental organizations for preparation for the United Nations Conference on Environment and Development (UNCED)" in 1992 in Rio de Janeiro.

In addition to bringing together these various groups within Brazil, the FORUM also serves as a point of contact for the UNCED secretariat, other UN bodies, and NGO networks outside Brazil. Its aim is to stimulate and coordinate NGO activities in Brazil before and during the conference, including the formulation of positions on the substantive issues under discussion. By presenting a united front, the FORUM can pressure the Brazilian government to adopt the UN recommendation for NGO participation in the official decision-making process and in the elaboration of national reports. It is important that the representatives of these 200 NGOs have a vehicle through the FORUM to ensure that environmental, social, cultural, and ethical

impact on governments. Governments have not changed as a result of the IPCC process but the IPCC has made it possible for them to do their job better than before. It is a job the scientific community could retain.

ECO As a Swede do you feel there is a parallel with the acid rain debate, after all that started over twenty years ago and is still not resolved?

Bolin Action on CO₂ is being taken. The Netherlands and Germany are ahead of Sweden in fact: the nuclear issue complicates that one. Many new investments (in technology and so on) involve CO₂ reductions that are economically beneficial. But to have a crash programme would be a terrible waste of money. One would have to scrap things that would have worked for decades.

ECO What would your message be to people outside this Conference?

Bolin Resolving the question about what needs to be done implies judgements about the well-being of populations: we need to find optimal ways of proceeding nationally and internationally. It is a ten year job and we are about a year into it. The (Ministerial) Conference this week will confirm some of these things — such as through the European initiative. That is a signal to the negotiators.

Now we need a cost benefit analysis to bring home to people the costs and benefits of taking action or not: one which brings in wider costs too, that is externalities.

We also need more scientists who are ready to go into the political area as active advisors.

issues be heard in the UNCED process.

Programs to deal with climate change must address the issues of developing countries, so that effective development models can be implemented there. The FORUM and its members suggest the following measures:

1) Promote the development of human capacity on issues related to climate change within developing countries: in the government, the universities, and the public.

2) Provide funding to deal with climate change. First, for environmental and other studies of specific regional eco-systems. Second, to assist in implementing necessary changes.

3) Promote effective mechanisms of industrial technology transfer in order to reduce the environmental degradation process which is usually related with industrialization in developing countries.

4) Stimulate the study of urban development and land-use to create effective planning methods in developing countries.

Delcio Rodrigues and Magda Lombardo
CEDI, Av Higienopolis, 983 Tel 55 11 825
5544 01238 Sao Paula SP, Brazil, Fax 55 11 825
7861

NEW PUBLICATION

Global Warming and the Third World: A New Newsletter

So far, Third World countries have not been closely involved in either the scientific or political discussions relating to global warming. "Insufficient information" and "insufficient communication" have been identified, by the IPCC, as two factors seriously inhibiting the involvement of Third World nations.

If these countries are to play their part in international negotiations on climate change, and guarantee that the terms of any agreement are not to their disadvantage, an adequate flow of information is essential. A newsletter due to be published from early 1991 aims to address this problem.

The newsletter has the support of the Swedish International Development Agency (SIDA). It will be published on a regular basis from early 1991 by the International Institute for Environment and Development (London-UK), in partnership with the Climate Research Unit (University of East Anglia, Norwich-UK) and the Climate Action Network (London-UK). Additional partners from Third World research and other organisations are currently being agreed.

If you would like to receive a copy of this newsletter, please write to: The International Institute for Environment and Development, 25 Bedford Square, London WC1B 3EJ, UK.

the scientific community with very few exceptions backs it, then it has a major

And scientists need to be better communicators and understand more about policy

newsletter, please write to *Global Warming And The Third World* newsletter, 47 Wellington Road, Norwich NR2 3HT, United Kingdom.

EFTA Countries Fall Out Over Stabilisation

by ECO Reporter

European Free Trade Association seemed likely to split over a proposal to stabilise CO₂ emissions in 2000 on 1990 levels Sunday night, as officials met to prepare for the Ministerial section of the Second World Climate Conference. Today Monday November 5 EFTA ministers are due to agree a joint strategy.

Yesterday evening negotiations between the EFTA group, normally at the front of environmental reform, was deadlocked over an Austrian proposal to limit each country's emissions to present levels, from the end of the century. Sweden and Finland opposed the Austrian move, which was initially backed by Switzerland and Norway. The controversial EFTA draft also called for negotiation of protocols in parallel with those for a climate convention. Observers believe Sweden's embarrassing position is explained by its commitment to also phase out nuclear power.

Environment groups of the EFTA countries attending the SWCC urged the EFTA group to promote 'as a first step, stabilisation at the 1988 level'. They also called for a 90% reduction by 2000 as a 'minimum intermediate target', pointing out that IPCC 1 concluded a 60% cut was needed to stabilise CO₂ levels at today's concentrations.

The groups also appealed to the EFTA bloc to 'strongly promote international agreements on forest conservation, and additional financial and technical aid to developing countries'. The environmentalists noted that 'great attention' would focus on the EFTA group as well as the EC, at the Conference, because they are widely expected to give a world lead on greenhouse gas reductions.

Sea Level - continued from front page commented "I don't know who the President's scientists are: the IPCC and SWCC estimates are a firm scientific consensus based on the work over hundreds of scientists". A senior official from an OECD country commented that the President could 'only have been talking about one scientist', John Sununu who is his Chief of Staff and an engineer. Delegates pointed out that as the US has accepted the final report of the IPCC, the President has in fact accepted the sea level rise estimates which he now rejects, although he may not be aware of that. "This insults science and the whole Pacific region - it's no less than outrageous hypocrisy," said Bill Hare of the Australian Conservation Federation.

Aid Offer

Bush offered an aid package believed worth hundreds of millions of dollars to the leaders, from the Solomon Islands, Tuvalu, Fiji, the Cook Islands, Papua New Guinea, Tonga, Western Samoa, Marshall Islands, Kiribati and the Federated States of Micronesia, as an inducement to rethink their opposition to the chemical incineration plans. So far, they have refused.



Léman was interested to hear Japanese delegates from MITI explain their country's new carbon dioxide target. Keichi Yokobori, who chaired the forceful Energy and Industry sub-group of IPCC confessed with pride in the wording of his country's recent declaration. "I received much praise for the per capita wording of our target which is very suitable for our needs", he told others. But Léman is told that the Japanese population is increasing. Léman understands that this will allow a 6% increase in CO₂ emissions, which seems to have been ignored by Mr Yokobori. So is this a real freeze or not? Léman feels the SWCC should be told.

Léman understands that unusual conditions of near hysteria broke out during the negotiations to agree the draft Ministerial Declaration in the early hours of Sunday morning. Tired delegates were reduced to gales of laughter as the United States, upset at being left off the list of countries which had done something to reduce CO₂ emissions (as they have not), repeatedly tried to get their country mentioned. Other nations which had not committed to stabilisation or cuts began to ask why, if the US were to be included, their paltry efforts might not qualify them for inclusion in the roll of honour. Mexico pointed out that something - not much admittedly - but something, had been done in Mexico City. The Indians remembered things underway in India which seemed just as relevant as the US not yet enacted Clean Air bill.

After some minutes, with the list growing ever longer, the US mention was consigned to square brackets. With the laughter of weary delegates echoing in Léman's ears, your correspondent retired to bed.

ECO's Who's Who: Guide to Environmental NGOs present at the Conference - Addendum

Friends of the Earth, USA - Liz Cook; Friends of the Earth, Luxembourg - Claude Turmes; Stichting Natuur en Milieu, Netherlands - Ralph Hallo; WWF, UK - Jane Bevan;

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Statement gutted - cont from front page

Late Sunday night, the drafting group adopted a long section on forests which backed away from commitments made at the Bergen and Noordwijk Conferences to call for a Protocol to protect forests, linked to a Climate Change Convention. "This is a chopper's charter - it's nothing useful" said Adam Markham of WWF. "it will end up in the hands of the FAO which has shown itself unable to conserve the world's tropical forests". Environment groups were alarmed at the failure of German delegates to oppose such weak wording. All references to the rights of indigenous peoples were also deleted.

USA, USSR and Saudi Arabia also overcame weak opposition from European countries, which had proposed the call for a 90% cut or at least stabilisation and won wording which merely states that 'establish targets and/or feasible national programmes or strategies'. The draft also allows countries to 'analyse feasibility' of these options before the June 1992 Brazil Sustainable Development conference. "This waffle lets the US off the hook: it means 18 months of doing nothing. Needless to say, the US is delighted", said Stewart Boyle, of the Climate Action Network.

SWCC Scientists - continued from front page

left out of models for simplicity, and others will increase as warming takes hold, 'it appears likely' that, 'as climate warms, these feedbacks will lead to an overall increase... in greenhouse gas concentrations'. In other words, 'climate change is even now probably under-estimated.

On the key gas carbon dioxide it states that: 'In order to stabilize atmospheric carbon dioxide concentrations... at about 50% above pre-industrial concentrations [today's levels being c. 25% above], a continuous world-wide reduction of net carbon dioxide emissions by 1 to 2% per year, starting now, would be required'.

As to countries of the 'third world' whose future emissions will determine the success of any climate agreement, it notes: 'it is clear that developing countries must... "leapfrog" ahead directly from a status of under-development through to efficient, environmentally benign, technologies presently found only in the most advanced industrial economies...' and calls for: 'a massive and sustained flow of scientific and technological expertise towards the development of the intellectual resources, technical and institutional capacity of the developing countries.

'Mechanisms for the transfer of technology' says the report, ... 'should take into account... the need for preferential and assured access, intellectual property rights, the environmental soundness of such technology and the financial implications.... Additional financial resources will have to be channelled to developing countries... both to [limit] greenhouse gas emissions, and/or [adapt] to any adverse impacts.

...so far, they remain opposed.

...Luis Rodriguez, Phil
Jessop, David McRobert

Extended Page 9.1
...any adverse impacts
of climate change, and [to promote] economic
development'.

ISSUE NO 7 VOLUME LXXV PUBLISHED DAILY FREE OF CHARGE



EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY
WASHINGTON, D.C. 20500

Michael R. Deland
Chairman

(202) 395-5080

November 6, 1990

MEMORANDUM TO GOVERNOR SUNUNU

FROM: Mike Deland

Re: PM Thatcher's Speech to 2nd World Climate Conference

Prime Minister Thatcher delivered the attached speech earlier today in Geneva.

Highlights:

Thatcher commits the UK "as part of an international effort including other leading countries" to stabilize CO2 emissions at 1990 levels by the year 2005.

She recognizes that "Targets on their own are not enough," and goes on to say that the UK now requires, by law, that a substantial proportion of their electricity come from low or no CO2 producing sources, including an important contribution from nuclear.

She picks up on the phrase "No Regrets," but also speaks in terms of "insurance policies."

She tackles the issue of resources head on, holding out the Montreal Protocol as a precedent for better-off countries assisting the poorer ones.

And, in an interesting choice of words, announces their plans "to replant one of the ancient forests of England..."

cc: Andy Card
Michael Boskin
Allan Bromley
Bill Reilly
Admiral Watkins

NOT FOR PUBLICATION, BROADCAST OR USE ON CLUB TAPES
BEFORE 11.15 LOCAL TIME ON TUESDAY 6 NOVEMBER 1990

TEXT OF A SPEECH

MADE BY THE PRIME MINISTER

THE RT HON MARGARET THATCHER FRS MP

AT THE SECOND WORLD CLIMATE CONFERENCE

IN GENEVA

ON

TUESDAY 6 NOVEMBER 1990

PRIME MINISTER'S OFFICE
10 DOWNING STREET
WHITEHALL
LONDON
SW1A 2AA

PLEASE CHECK AGAINST DELIVERY

[Introduction]

Mr. Chairman, Your Majesty, President Koller, Distinguished Colleagues, Your Excellencies, Ladies and Gentlemen,

May I begin by thanking Heads of Agencies and Organisations for sponsoring this Second World Climate Conference, and indeed all those connected with it. It is a most important event for all our countries and I wish you success in your endeavours.

Mr. Chairman, since the last World War, our world has faced many challenges, none more vital than that of defending our liberty and keeping the peace. Gradually and painstakingly we have built up the habit of international cooperation, above all through the United Nations. The extent of our success can be seen in the Gulf, where the nations of the world have shown unprecedented unity in condemning Iraq's invasion and taking the measures necessary to reverse it.

But the threat to our world comes not only from tyrants and their tanks. It can be more insidious though less visible. The danger of global warming is as yet unseen, but real enough for us to make changes and sacrifices, so that we do not live at the expense of future generations.

Our ability to come together to stop or limit damage to the world's environment will be perhaps the greatest test of how far we can act as a world community. No-one should under-estimate the imagination that will be required, nor the scientific effort, nor the unprecedented co-operation. We shall have to show statesmanship of a rare order. It's because we know that, we are here today.

[Man and Nature: out of balance]

For two centuries, since the Age of Enlightenment, we assumed that whatever the advance of science, whatever the economic development, whatever the increase in human numbers, the world would go on much the same. It was progress. And that was what we wanted.

Now we know that this is no longer true.

We have become more and more aware of the growing imbalance between our species and other species, between population and resources, between humankind and the natural order of which we are part.

In recent years, we have been playing with the conditions of the life we know on the surface of our planet. We have cared too little for our seas, our forests and our land. We have treated the air and the oceans like a dustbin. We have come to realise that man's activities and numbers threaten to upset the biological balance which we have taken for granted and on which human life depends.

We must remember our duty to Nature before it is too late. That duty is constant. It is never completed. It lives on as we breathe. It endures as we eat and sleep, work and rest, as we are born and as we pass away. The duty to Nature will remain long after our own endeavours have brought peace to the Middle East. It will weigh on our shoulders for as long as we wish to dwell on a living and thriving planet, and hand it on to our children and theirs.

[The importance of research]

I want to pay tribute to the important work which the United Nations has done to advance our understanding of climate change, and in particular the risks of global warming. Dr. Tolba and Professor Obasi deserve our particular thanks for their far-sighted initiative in establishing the Intergovernmental Panel on Climate Change.

The IPCC report is a remarkable achievement. It is almost as difficult to get a large number of distinguished scientists to agree, as it is to get agreement from a group of politicians. As a scientist who became a politician, I am perhaps particularly qualified to make that observation!

Of course, much more research is needed. We do not yet know all the answers. Some major uncertainties and doubts remain. No-one can yet say with certainly that it is human activities which have caused the apparent increase in global average temperatures. The IPCC report is very careful on this point. For instance, the total amount of carbon dioxide reaching the atmosphere each year from natural sources is some 600 billion tonnes, while the figure resulting from human activities is only 26 billion tonnes. In relative terms that is not very significant. Equally we know that the increases of carbon dioxide in the atmosphere date from the start of the industrial revolution. And we know that those concentrations will continue to rise if we fail to act.

Nor do we know with any precision the extent of the likely warming in the next century, nor what the regional effects will be. We cannot be sure of the role of clouds.

There is a continuing mystery about how atmospheric carbon, including the small extra contribution from human sources, is being absorbed: is most of it going into the ocean, as used to be thought? Or is it being increasingly absorbed by trees or plants, or soils, especially in the northern hemisphere? These are questions that need answers, sooner rather than later.

Global climate change within limits need not by itself pose serious problems - our globe has after all seen a great deal of climate change over the centuries. It is notable that the blue-green algae which dominated the Precambrian period at the dawn of life are still major components of the marine phytoplankton today. Despite the climate changes of many millions of years, these microbes have persisted on earth virtually unchanged, pumping out life-giving oxygen into the atmosphere and mopping up carbon dioxide.

The real dangers arise because climate change is combined with other problems of our age: for instance the population explosion;

- the deterioration of soil fertility;
- increasing pollution of the sea;
- intensive use of fossil fuel;
- and destruction of the world's forests, particularly those in the tropics.

Britain will continue to play a leading role in trying to answer the remaining questions, and to advance our state of knowledge of climate change. This year, we have established in Britain the Hadley Centre for Climate Prediction and Research for this purpose. We need to improve in particular our understanding of the effect of the oceans on our weather, improve too our capability to model climate change. I have seen for myself the outstanding work being done on both these subjects at the National Center for Atmospheric Research in Boulder, Colorado. ✓

We must also make sure that research is carefully targeted. Too many people can do the same thing, and at the same time vital problems can be neglected. The task of global observation is immense. It will require a coordinated effort more ambitious than any attempted before, as the meeting of scientists and experts last week recognized.

[The need for precautionary action]

But the need for more research should not be an excuse for delaying much needed action. There is already a clear case for precautionary action at an international level. The IPCC tells us that we cannot repair the effects of past behaviour on our atmosphere as quickly and as easily as we might cleanse a stream. It will take, for example, until the second half of the next century, until the old age of my grandson, to repair the damage to the ozone layer above the Antarctic. And some of the gases we are adding to the global heat trap will endure in the Earth's atmosphere for just as long.

The IPCC tells us that, on present trends, the earth will warm up faster than at any time since the last ice age. Weather patterns could change so that what is now wet would become dry, and what is now dry would become wet. Rising seas could threaten the livelihood of that substantial part of the world's population which lives on or near coasts. The character and behaviour of plants would change, some for the better, some for worse. Some species of animals and plants would migrate to different zones or disappear for ever. Forests would die or move. And deserts would advance as green fields retreated.

Many of the precautionary actions that we need to take would be sensible in any event. It is sensible to improve energy efficiency and use energy prudently; sensible to develop alternative and sustainable sources of supply; sensible to replant the forests which we consume; sensible to re-examine industrial processes; sensible to tackle the problem of waste. I understand that the latest vogue is to call them 'no regrets' policies. Certainly we should have none in putting them into effect. ✓

And our uncertainties about climate change are not all in one direction. The IPCC report is very honest about the margins of error. Climate change may be less than predicted. But equally it may occur more quickly than the present computer models suggest. Should this happen it would be doubly disastrous were we to shirk the challenge now. I see the adoption of these policies as a sort of premium on insurance against fire, flood or other disaster. It may be cheaper or more cost-effective to take action now than to wait and find we have to pay much more later. ✓

[The need for environmental diplomacy]

We are all aware of the immense challenge. The enormity of the task is not a matter for pessimism. The problems which science has created science can solve, provided we heed its lessons. Moreover, we have already established a structure of international co-operation on the environment to deal with ozone depletion. For the first time ever, rich and poor nations alike set out together to save our planet from a serious danger. This painstaking work culminated in the historic agreement reached in London this year. That agreement is a real beacon of hope for the future.

The main focus in London was on protecting the ozone layer. But the agreement will have other consequences. We should not forget that CFCs are 10,000 times more powerful, molecule for molecule, than carbon dioxide as agents of global warming. But of the other greenhouse gases, carbon dioxide is by far the most extensive and contributes around half the manmade greenhouse warming. All our countries produce it. The latest figures which I have seen show that 26 per cent comes from North America, 22 per cent from the rest of the OECD, 26 per cent from the Soviet Union and Eastern Europe and 26 per cent from the less developed countries.

These figures underline why a joint international effort to curb greenhouse gases in general and carbon dioxide in particular is so important. There is little point in action to reduce the amounts being put into the atmosphere in one part of the world, if they are promptly increased in another. Within this framework the United Kingdom is prepared, as part of an international effort including other leading countries, to set itself the demanding target of bringing carbon dioxide emissions back to this year's level by the year 2005. That will mean reversing a rising trend before that date.

The European Community has also reached a very good agreement to stabilise emissions. I hope that Europe's example will help the task of securing world-wide agreement.

Targets on their own are not enough. They have to be achievable. Promises are easy. Action is more difficult. For our part, we have worked out a strategy which sets us on the road to achieving the target. We propose ambitious programmes both to promote energy efficiency and to encourage the use of cleaner fuels.

We now require, by law, that a substantial proportion of our electricity comes from sources which emit little or no carbon dioxide. That includes a continuing important contribution from nuclear energy.

Such measures as these - which increasing numbers of countries are adopting - should be seen as part of the premium on that insurance policy which I mentioned. They buy us protection against the hazards of the future: but they also pay dividends even though the gloomier predictions about global warming are not fulfilled - dividends such as less air pollution, lowered acid rain, reduced energy costs.

Mr. Chairman, people may disagree about the effects of increased man-made carbon dioxide in the atmosphere. But everyone agrees that we should keep in healthy condition the forests and seas which absorb and utilise a large part of it here on earth. We would be wise to do that for other reasons too: for the beauty of the forests and the infinite variety of species which inhabit them, and to preserve the food chain and balance of nature in the sea.

That's why we want to contribute to conserving the world's forests, and to planting new ones. Trees help to reduce global warming. We intend to plant more at home: we have just announced our plans to replant one of the ancient forests of England - destroyed in an earlier phase of our history.

We shall offer our expertise and aid funds to help plant and manage forests elsewhere in the world, particularly in tropical countries. A year ago I told the United Nations General Assembly that the United Kingdom would aim to increase its funds for tropical forestry by £100m. We now have 150 projects underway in more than 30 countries.

Our aim is to give the people in those countries a better standard of living by conserving and using the forests than by cutting them down.

[The need for a Global Convention]

But our immediate task this week is to carry as many countries as possible with us, so that we can negotiate a successful framework convention on climate change in 1992. We must also begin work on the binding commitments that will be necessary to make the convention work.

To accomplish these tasks, we must not waste time and energy disputing the IPCC's report or debating the right machinery for making progress. The International Panel's work should be taken as our sign post: and the United Nations Environment Programme and the World Meteorological Organisation as the principal vehicles for reaching our destination.

We will not succeed if we are too inflexible. We will not succeed if we indulge in selfrighteous point-scoring for the benefit of audiences and voters at home. We have to work sympathetically together. We have to recognise the importance of economic growth of a kind that benefits future as well as present generations everywhere. We need it not only to raise living standards but to generate the wealth required to pay for protection of the environment.

It would be absurd to adopt policies which would bankrupt the industrial nations, or doom the poorer countries to increasing poverty. We have to recognise the widely different circumstances facing individual countries, with the better-off assisting the poorer ones as we agreed to do under the Montreal Protocol.

The differences can't be drafted away in that famous phrase so beloved of diplomats "a form of words". They need to be resolved by tolerant and sympathetic understanding of our

-6-

various positions. Some of us use energy more efficiently than others. Some of us are less dependant on fossil fuels. And we each have our own economic characteristics, resources, plans and hopes for the future. These are the realities that we must face if we are to move forward towards a successful conclusion to our negotiations in 1992.

Just as philosophies, religions and ideals know no boundaries, so the protection of our planet itself involves rich and poor, North and South, East and West. All of us have to play our part if we are to succeed. And succeed we must for the sake of this and future generations.

One of our great poets, George Herbert, in his poem on "Man" wrote this:

"Man is all symmetry,
Full of proportions, one limb to another, And all to all the
world besides;
Each part may call the farthest, brother, For head with foot
hath private amity,
And both with moons and tides."

We are, in symmetry with nature. To keep that precious balance, we need to work together for our environment. The United Kingdom will work with all of you in this cause -to save our common inheritance for generations yet to come.



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Message

1. See especially p. 5 of Speech by P.M. of Tuvalu
2. See "ECO" for several articles (one only in this one) mentioning Dr. B.

ECO



Eco has been published by Non-Governmental Environmental Groups at major international conferences since the Stockholm Environment Conference in 1972. This issue is produced cooperatively by groups attending the Second World Climate Conference 1990

US CLAIM BASED ON DOUBLE COUNTING CFCs

By ECO Staff

The United States' claim, made by Mr Allan Bromley, President Bush's Science Advisor, that US greenhouse gas emissions will be held "at 1987 levels until at least the year 2000" is three-quarters based on counting CFCs already to be controlled under the Montreal protocol, it emerged yesterday.

Bromley's assertion, made in a speech on October 23rd, is undermined by unpublished EPA calculations, which show that the US programme relies far more on the CFCs than on the policies of tree-planting, landfill gas control, the new Clean Air Act, energy efficiency initiatives and other measures — which Bromley has emphasised. As Brooks Yeager, of the US Audubon Society points out: "In fact, the US 'stabilisation' programme assumes a 15% increase in CO₂ at the turn of the century." Yeager also questions other aspects of the programme. "The tree planting is not yet funded and discussion of the the 'global forestry convention' proposed at the Houston G7 summit that

Bromley mentions, has now been deferred until March 1991."

According to the EPA study, the US calculation, that in terms of 100-year global warming potentials the year 2000 emissions should have no greater impact than those of today, is arrived at as follows:

Current Commitment

Millions of tonnes of carbon reduced
(Carbon equivalents)

Tree initiative	9
DOE Energy Efficiency Initiatives	28
DOE Appliance Standards	4
DOE Renewable Initiatives	4
Clean Air Act	68
Landfill Regulation	44
CFC Phaseout & Montreal Protocol	551
Total:	708

This projected reduction for year 2000 emissions compares to US expected total emissions of 3,040 million tonnes without CFC phaseout under the Montreal Protocol. Total US emissions in 1987 were 2,330 million tonnes.

— continued on back page, col 3

Former US Negotiator Damns American Position

"The US position is not only irresponsible, but unnecessary," said William A Nitze, President of The Alliance To Save Energy said yesterday. Commenting on the US policy at the Second World Climate Conference, Nitze, a former State Department negotiator on environmental issues, added, "The US has greater opportunities for reducing its CO₂ emissions through greater energy efficiency and use of renewables than most other industrialised countries. An internal EPA study shows US CO₂ emissions increasing by less than 15% between 1987 and 2000 even without counting the full benefits of the Clean Air Act amendments. Use of a 1990 baseline and modest policy changes to exploit lower or negative cost energy efficiency improvements would eliminate any growth in US CO₂

— continued on back page, col 3

CONTENTS

News	1,8
Interview: Giorgio Ruffolo	2
Letter to Mr Cotti	2
Conference Report	3
Quotes of the Week	3
Leader	4
Opinion and Analysis	
— Japan	4-5
Focus on Eastern Europe	6
Focus on Technology	7

EFTA ANNOUNCES TALKS AIMED AT CO₂ STABILISATION

By ECO Reporter

Following a joint meeting with European Community countries yesterday, a statement released by EFTA and EC Ministers represented by Flavio Cotti of Switzerland and Giorgio Ruffolo of Italy announced that 'senior environmental officials' would 'undertake every effort towards the adoption of a concerted EC/EFTA position and as appropriate, common proposals to the extent possible on issues such as achieving stabilisation and subsequent reduction of CO₂ and other greenhouse gas emissions'.

Cotti and Ruffolo described the outcome of the meeting as a commitment by every country to stabilisation. Ruffolo described the meeting as "satisfactory and encouraging". Carlo Ripa di Meana, EC Environment Commissioner referred to "broad harmonisation" between EFTA and EC countries, and suggested that "the 18 countries of Europe are convinced and committed to stabilise CO₂ emissions by the end of this century". Ruffolo added "there is no possibility for delaying or postponing action".

Swedish Position Unknown

But the vague wording of the 'Joint President's

- continued on back page, col 2

Leman 8

ISSUE NO 8 VOLUME LXXV PUBLISHED DAILY FREE OF CHARGE

C O N F E R E N C E R E P O R T

OECD
STABILISATION
PROPOSAL

How should the SWCC Science Report be translated into policy? That is the main question now facing politicians in the Ministerial conference.

Here David McRobert interviews Bunli Yang, Policy Adviser in the Cabinet Office of the Ontario government about a way forward for the OECD.

The scientific report of the Second World Climate Change Conference has confirmed an even stronger consensus for immediate actions to reduce the risks posed to the climate by the "Business-as-Usual" approach in the industrialized countries. However, possible next steps for policy-makers are under intense dispute as the Ministerial portion of the SWCC gets underway.

To explore what some of the next steps might be, ECO interviewed Dr. Bunli Yang, a policy advisor to the Cabinet Office of the Government of Ontario, Canada about his views on how to achieve even a small breakthrough in negotiations for an international convention on climate change.

ECO *What implications for policy-makers do you draw from the scientific and technical report of the SWCC?*

Yang The wide agreement expressed here at SWCC on the need for actions leads me to think that the ball is in the policy-makers' court to propose some practical things for the industrialized nations to do.

ECO *Given the arguments being made about uncertainty of regional impacts and the need for flexible response, what kinds of measures can industrialized nations take on a collective basis before an overall international convention is negotiated?*

Yang Well, I think that collective action by the industrialized nations is both possible and needed. If we have learned anything from the process that led up to the 1987 Montreal Protocol, and its stronger revamping in London this summer, it's that fairness to developing countries is essential. So for

example, in trying to get the developing countries to take part in an overall agreement on greenhouse gas emissions, there should be an assurance of financial resources for them.

ECO *The notion of a fund for technology transfer has been raised before, what's different now?*

Yang The problem has been how to allocate the responsibility for paying the funds. There might be a straightforward way: on the basis of current use of fossil fuels. So, for example, think of a fund for technology transfer for energy conservation of \$250 million per year. That's only 10 cents per tonne of carbon in the fossil fuels used by OECD countries. So the OECD countries, in proportion to their existing energy use, would help improve energy efficiency in the developing countries. That strikes a fairness chord in me.

ECO *The SWCC scientific report refers to cost-effective measures in the industrialized countries themselves, yet we hear that the draft Ministerial Statement does not even refer to the Toronto 20% target. And many countries, led by the US, seem to be avoiding even stabilization of emissions. Are the industrialized countries ready to reduce emissions?*

Yang I think the targets are useful to focus attention on the size of commitments needed. But they can't be applied to the developing world on a country-by-country basis. And even for the OECD, it's the emissions in total that need reducing now, not just country-by-country. So the next step would be to make contributions by OECD governments (say at 10 cents per tonne) tradeable, with a higher charge for fossil fuels used above the overall OECD 1990 cap.

ECO *That sounds complex and hard to administer. How would it work?*

Yang Well, the OECD use of fossil fuels in 1990 ends up in 2.5 billion tonnes of carbon. The US part is about 1.1 billion tonnes, so the US contribution to the transfer fund would be \$110 million for its 1990 use of fossil fuels. Set an OECD cap at 1990 levels for 1990-2000. This is 'stabilization of emissions'. So if in 1995 the US emits 1.3 billion tonnes, it would pay into the technology fund \$110 million, having bought (or traded with) other OECD countries the permits for the additional 200 million tonnes. They would probably cost the US more than 10 cents per tonne. But there might not be enough permits for these contributions because the OECD countries together might be exceeding their cap of 1990 levels. Then the higher charge, essentially a penalty surcharge, of say \$5 per tonne would kick-in. So if there were no more permits available under the OECD 1990 cap, the US would pay into the fund for the additional 200 million tonnes at \$5 per

tonne, or another \$1 billion. That would be a very powerful economic incentive for the country to reduce fossil fuel use, and yet the money would be going into very worthwhile efforts.

ECO *Is this a practical possibility for the Ministers to commit to? And besides, the way you've described it, the stabilization target can be exceeded, so maybe it isn't a cap at all.*

Yang I think your earlier question of administration is important. No kind of cap or reduction target is going to be enforced internationally by the threat of death or criminal penalties! There will have to be economic measures that will provide strong, self-interest incentives. What better way than to use the existing abilities of the OECD and the IEA (International Energy Agency) to track fossil fuels use, and to have the OECD collect the contributions on that basis? The tradeable nature of the permits means that each country can have a flexible strategy but still have a strong incentive to go below 1990 levels of fossil fuel use.

ECO *Are the Ministers ready for this?*

Yang I think this approach addresses several issues at once: how to get funds today for the developing countries, how to allocate the funding fairly, how to get a meaningful OECD cap, and how to be flexible for individual countries. The Ministerial delegations are probably looking for constructive things to do, following the pretty solid scientific consensus from last week.

Quotes of the Week

"Reilly didn't feel it requires his time. It is largely a conference on climatology"

Bill Reilly's Press Secretary to Reuters, David Cohen, explaining why the US Chief Administrator to the EPA was absent from the SWCC

"As a scientist, I have no view or opinion as regards the position of the United States"
Professor Dooge, Chairman of the Organizing Committee, at the SWCC Press Conference

"It's like asking a parent how you treat your children — not that I'm trying to be paternalistic"

Professor Dooge, Chairman of the Organizing Committee, at the SWCC Press Conference

"I think we should say the Conference concludes that reductions are technically achievable"

Dr Al Gain of Saudi Arabia, in the last Science Plenary

"I think the Energy Working Group can live with that"

Dr Irving Mintzer of the US

OPINION AND ANALYSIS — JAPAN

日本政府の皆様へ

日本政府の方々は、"ムリなりの二酸化炭素(CO₂)排出量について2000年以後、概ね1990年レベルでの安定化"という目標を示したことで、第2回世界気象会議での任務は終了に思っているようにですね。

でも世界40数団体からジュネーブに集ったNGOの人々は、もう満足していませんよ。

環境庁が示した積極案も、産業界がバツクにして省庁間で強い発言力を持つ通産省がつかじにかかっていること、アメリカに歩調を合わせて環境庁長官も意図的にジュネーブに送って来ないことなど、二重に内部に多い日本の行動計画にも、Villa Rigotで、盛んに話題になっているのですから。

技術力、経済力ともに指導的地位に立つ日本が、この2日間の関係会議でアメリカの顔色をうかがうのではなく、私たち日本国民の事を反映させ、CO₂削減に向けて積極的に行動することも、世界のNGOとともに監視していきますよ。

地球の友より



Keiko Ishikawa, FoE Japan

A Message to the Japanese Delegation

You seem to be quite pleased with yourselves and feel that your job is over at the Second World Climate conference because you have announced a target of stabilising "per capita" CO₂ emissions at the 1990 level after the year 2000. However, the more than 40 non-governmental organisations (NGOs) attending the conference do not share the same feeling with you in this respect. Recent talk among NGOs at the Villa Rigot has been focusing on the way in which the Ministry of International Trade and Industry (MITI), one of the most powerful Japanese ministries which has strong backing from Japanese industry, has crushed the very positive proposal put forward by the Environment Agency (EA), as well as the fact the Director General of EA has decided not to come to Geneva in order that Japan will appear to be sending a low level delegation like the US. The NGOs will be scrutinising your position very closely at the ministerial conference over the next 2 days to determine whether you listen to the voice of the Japanese people rather than keeping your eyes cast on the actions of the US, and if you will take a step forward towards reducing CO₂ emissions.

Friends of the Earth, Japan

Japan's Plan for Centralised, Nuclear Action

By Dwight Van Winkle, CASA Japan

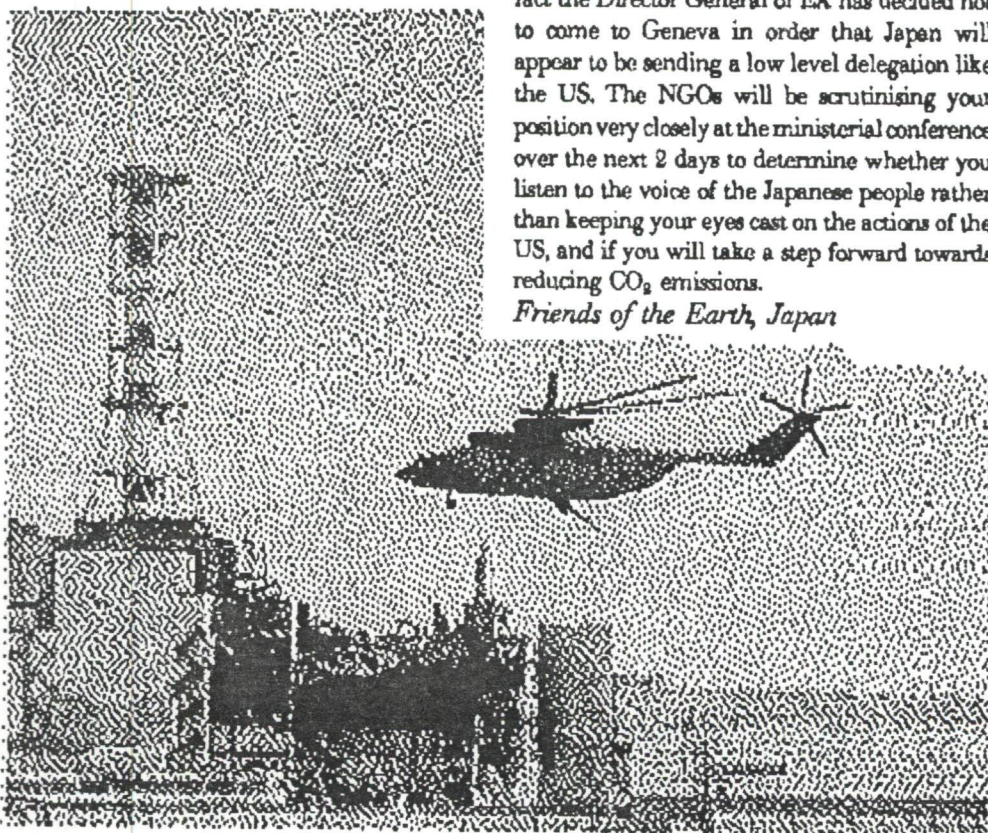
On page 7 of its Action Plan to Arrest Global Warming, the Japanese government informs us that nuclear power is "an energy with no CO₂ emission." Perhaps Japan could share with the rest of the world their secret of materialising out of thin air completed nuclear power plants and fuel to drive them. Outside of Japan, people still have to expend a tremendous amount of energy, mostly provided with fossil fuels, to mine and transport nuclear fuels, to build and maintain the plants, to store radioactive wastes for the necessary thousands of years, and to decommission these plants at the end of their short life spans.

Japanese power companies plan to build 40 nuclear power plants within the next 20 years, doubling their number. In Japan, nuclear power is being billed by its supporters as a "clean energy" which will provide a solution to the problem of global warming. They obviously have not talked to the leukemia victims of Chernobyl, who probably feel differently about the cleanliness of radioactivity.

The recommendations of Task Group 4 (Energy) include nuclear power among energy technologies that reduce greenhouse gas emissions. The Japanese government must be happy with this inclusion. I suggest they read on, however. The Task Group continues, "new methods are required to identify the least-cost mix" of energy sources. "Such methods must reflect the full economic, environmental, and public health cost of energy supply and use." Face it, Japan. Even if your electrical utilities were able to overcome the strong public opposition to nuclear power in Japan and find sites for 40 new plants, nuclear power fails to meet each of these very clear criteria for least-cost planning, and should be rejected both as a source of further power and as a means of alleviating solution to global warming.

Also on page 7 of the Action Plan, Japan states that "the introduction of dispersed power generation, such as fuel cells and photovoltaic cells, should be encouraged." They had better focus their encouragement on the Japanese Energy Utility Industry Council, who announced in June in their long-term forecast of electrical power supply composition that dispersed power sources will account for only 0.5% of total electrical power sources in 2000, and 2% in 2010. Not a very optimistic forecast, and one which is likely to be self-fulfilling.

Left: Chernobyl — It couldn't happen in Japan?



Will Norway Increase Emissions of CO₂?

By Gunnar Bolstad

Norway plans to increase its emissions of CO₂ by 6%. The increased emissions will come from a gas powerplant located in the North-West of the country, near the city of Kristiansund. Environmentalists hope that Gro Harlem Brundtland now returned as Prime Minister, will stop the plan.

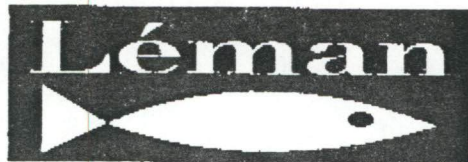
The Norwegian emission of CO₂ is 8.5% tonnes per capita. This is 4.5 tonnes more than the world average, despite the fact that 45% of Norway's energy comes from hydroelectric power.

In June of last year the Norwegian National Assembly decided that emissions of CO₂ are to be stabilised at the 1989 level by the year 2000. The State Pollution Control Authority has presented a cost-benefit analysis of CO₂ reductions, but at the moment there is no government plan as to how emissions will be stabilised at the 1989 level.

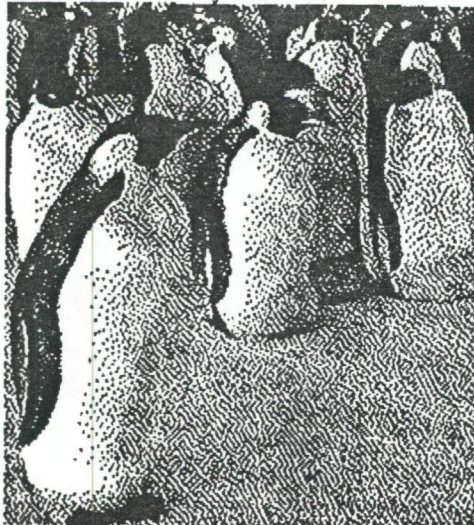
There are, however, plans to increase the emissions of CO₂ by 6%. A gas powerplant will emit more than 2 million tonnes of CO₂. The powerplant is supposed to provide energy for the metal industry, including the giant industrial company Norsk Hydro, which is partly state-owned.

Environment groups believe a much better environmental solution would be to export the gas as a substitute for oil and coal in the UK, or on the continent, where a gas power plant also can be utilised as a central heating plant, thus using the gas more efficiently.

Today there is an energy surplus in Norway and profitable saving potential of 20%, according to official estimates.



Léman is on holiday in Sweden



Léman ministerial competition

EFTA - continued from front page

Conclusions' does not amount to a binding or specific commitment. When asked at a press conference whether individual EFTA countries such as Sweden, Iceland and Finland had committed themselves to stabilisation of CO₂ emissions at present levels by 2000, Cotti was unable to answer. When asked if the net emissions of EFTA countries would stabilise, Cotti replied that "EFTA countries had no agreement together" and added that EFTA had no environmental remit, "environment does not belong in EFTA" he said.

Switzerland and Austria are publicly committed to CO₂ reductions but it is understood that neither Finland or Sweden are.

The EFTA/EC position invites 'all industrialised countries to take actions similar to those decided by the EC/EFTA countries and by certain other industrialised countries aimed at stabilising CO₂ emissions by the year 2000'. Following 'feasibility studies' programmes, strategies or targets for non-CO₂ greenhouse gases should be developed, adds the statement.

Eastern and Central Europe

The EFTA/EC Ministers also propose environmental cooperation in developing the European Economic Area covering both blocs, with 'policies based on the precautionary principle' in order to achieve 'sustainable development'. The Convention on Climate Change and 'legal instruments related to it, should be signed at the United Nations Conference on Environment and Development in 1992', while there needs to be closer cooperation with Central and Eastern Europe, says the statement.

The EFTA/EC position introduces the idea of applying the definition 'best available technology not entailing excessive cost' to development in East and Central Europe. It also calls for more use of 'economic and fiscal instruments' including pollution fees, noting that the next opportunity to discuss these at Ministerial level will be at the OECD Environment Committee in January 1991.

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US Claim - continued from front page

Environmentalists accept that the Clean Air Act will bring real benefits but contrast this with briefings given by the Administration to US press, criticising other countries for making similar claims about future work. Alden Meyer of the Union of Concerned Scientists commented yesterday "The National Energy Strategy which Allan Bromley refers to appears likely to be heavily weighted in favour of increased domestic fossil fuel production and to largely overlook the tremendous potential for cost-effective energy efficiency improvements. He adds: "Allan Bromley claims that 'No other nation' can make the claim that it will hold its greenhouse impact at 1987 levels by the end of the century but this is just not true. European countries and others that have committed to stabilise their CO₂ emissions while also phasing out CFCs will obviously realise significant reductions in overall greenhouse gas emissions. The US, by contrast, will make no progress over the next decade in overall emissions reductions."

Observers also contrasted the US claim which involves the so-called 'comprehensive' or 'basket of gases' approach, with the recently agreed Australian policy which specifically excludes CFCs from a pledge to stabilise its greenhouse impact in 2000 and cut it 20% by 2005 (see SWCC ECO 1).

The EPA document acknowledges that 'If CFCs are not included in the total greenhouse gas budget, total emissions in the year 2000 will exceed 1987 levels by approximately 111 million metric tonnes of carbon equivalents'. Actual CO₂ emissions it notes, will be 15% above 1987 levels.

ECO's Who's Who: Guide to Environmental NGOs present at the Conference - Addenda

The Alliance To Save Energy, US - Bill Nitze; Greenpeace, Austria - M. Johann; Greenpeace, UK - Steve Elsworth; Norwegian Society for Conservation of Nature - Gunnar Bolstad; UN Association Youth, UK - David Allen.

Nitze - continued from front page
emissions. Therefore the US refusal to accept CO₂ stabilisation must be based more on ideology than on rational economic analysis."

Split With Allies

"The White House has no appreciation of the international dimensions of this issue," Nitze continued. "Continued US refusal to acknowledge the seriousness of greenhouse warming and the need for immediate action in the face of growing scientific and political consensus is driving a wedge between the US and its closest allies. Key developing countries have made it clear that they will not take further action until the world's largest CO₂ emitter commits to reduce its own emissions. If the US does not change its position soon," Nitze concluded, "it will lose its credibility as a world leader on the most important international

CHECK AGAINST DELIVERY

Address
by the
Prime Minister of Tuvalu
Rt Hon. Bikenibeu Paeniu
to the
Second World Climate Conference

Geneva
6, November 1990

I am most honoured and privileged to be amongst the main key speakers this morning.

I congratulate the World Meteorological Organisation (WMO) and the United Nations Environmental Programme (UNEP) and all those who have worked hard to ensure the holding of this most important Conference.

I must say it is quite a daunting experience to address a collection, or should I say a cluster of most eminent scientists, experts, researchers, diplomats and policy makers today on the subject of climate.

When I was asked to take part in this Conference, I was comforted by the very fact that I could speak with my heart on the matter. I can assure each and everyone of you that I speak to you today from real experience because I live on one of the most smallest island groups in the Pacific. We are therefore, along with others, extremely vulnerable to environmental hazards and the dangers of the Greenhouse Effect and sea level rise. These are problems which we have done the least to create but now threaten the very heart of our existence.

We in the Pacific, the Carribean and elsewhere had done the least to create these hazards but now stand the most to lose.

My colleagues who have eloquently spoken before me are prominent leaders from some of the leading nations of our world. From the onset, I want to express my gratitude for their important remarks and their concern for climate change. Despite the smallness of my country, and of others, we are all here gathered to address a paramount global challenge. Climate change will affect all of us.

However, because of our vulnerability and high susceptibility to climate changes, we would be affected proportionally more than many of the countries represented here today.

I am very confident that not only do I speak for my country, but also I speak for my neighbouring countries in the Pacific and as well as others, especially those from the Southern Hemisphere.

I sincerely hope I will be able to share with you this morning a somewhat different but interesting perspective on the problem of climatic change.

Why Tuvalu is particularly susceptible to Climatic Changes

As some of you may not know, my country has a total land area of only 24.4 square kilometres - only a speck on the maps of the world. This 24.4 square kilometres is further divided among nine islands, ranging in size from Vaitupu which is 4.9 sq.km to Niulakita of only 0.4 sq.km. All our nine islands are low lying coral atolls dispersed over an area of 1.2 million square kilometres of the South Pacific Ocean, none rising more than 2 metres above sea level.

In sharing a number of thoughts with you today, I want to tell you the reality of life in Tuvalu in terms of the impact on our lives of the global climatic changes so far. My country is amongst the most vulnerable to climate and sea level rise in the world. The survival of Tuvalu and the survival of other neighbouring countries in the South Pacific - Kiribati, Tokelau, Tonga, Marshall Islands and so forth - hang in the balance. This eminent gathering therefore could make the difference between Tuvalu's imminent demise and its continued existence.

The scientists have confirmed that global warming is now a certainty. The findings of the international scientific community finalised in Sweden this year, have now been confirmed by the experts gathered here last week. We have learned of the best Scientific and Technical estimates assuming "business as usual" for greenhouse gas emissions which are:

An average rate of increase of global mean temperature during the next century of about 0.3 de C per decade (uncertainty range of 0.2 to 0.5 deg C).

An average rate of global mean sea level rise of about 6 cm per decade (uncertainty range of 3-10 cm per decade).

Now it is up to the decision makers of the world, particularly those of the leading industrialised nations, to respond with decisiveness and conviction. We know from all the scientific evidence collected to date that the fragile and delicate atmospheric balance on which life and our existence depends has been upset. The threat to the atmosphere comes predominantly from the breath of industrialised civilisation.

We in the island nations cannot afford to wait for more studies and research. We would like to have firm and pragmatic solutions to curb the negative impact of climatic changes on our lives.

We live on these small fragile islands and we know that the problems are now and not tomorrow. The time to act is now or never.

Tuvalu needs help to face up to this challenge. In particular, we in the Pacific and others in the Southern

As we in the Pacific Island region enter the 1990's, we increasingly face a range of environmental problems far more extensive and more serious than ever before. Problems of ozone depletion, climate change, sea level rise, hazardous waste dumping, driftnet fishing - to name some which fall into this category. These impinge severely on the development process itself of our countries in the Pacific and the overall impact has been, and will continue to be, unfavourable.

Already we in Tuvalu have been experiencing the adverse effects of global warming and the greenhouse effects. I am happy to share with you some of the most salient features.

a. Frequency of Tropical Cyclones

In 1940 there were 2 cyclones, but over the last fifty years the number has risen dramatically - a ten-fold rise to 8 in 1960, 18 in 1980 and 21 so far in 1990. These storms have seriously caused erosion to the already extremely limited amount of land we possess. This in turn bears an impact on population growth and pressure on other resources.

Cyclones have also devastated many of our crops and trees. The loss of trees can cause the interruption of the nutrient cycle above and below the soil. The soil loses fertility, plants and animals lose their habitats, and our food and water supplies and our healthy air is also seriously affected.

b. The Water Table

We have not yet installed measuring instruments to test the rise in sea level but we have noted increased salinity in ground water supplies, attesting to intrusion of sea water into the water table. This increased salinity impacts unfavourably on both the supply of drinking water as well as efforts to grow things, - agriculture being already difficult due to harsh soils.

c. Temperature Changes and Rainfall levels

Despite the rise in the number of cyclones, Tuvalu has been experiencing an increasing number of dry spells, with average annual rainfall declining from 420 millimetres per annum at December 1980 to 300 millimetres at December 1988 - a drop of 28.6% in the eight year period. Simultaneously, average daily temperatures have risen by 0.5 degree celsius over the last thirty years.

In light of all the above we entreat this Conference to propose measures which promote urgent and pragmatic actions, rather than having this gathering end up as

Action Being Taken by Tuvalu to Prevent/Mitigate Adverse Climatic Changes

a. Energy

Less than 50% of our total population of 8,309 people have access to electricity but 1.8% of household energy consumption is solar generated. We intend to increase this proportion to 3% by 1993. All electricity in the outer-islands is solar generated.

b. Agriculture

We have embarked on a modest re-afforestation programme whereby, between 1970 and 1987 some 115.3 hectares of land was replanted with coconut trees. Early in 1991 we intend to begin a new tree planting exercise, including coconuts, mangoes and citrus. As a further measure, farmers are actively encouraged to inter-crop coconuts with root crops. Again we consciously utilize natural manure instead of chemical fertilizers and promote biological pest control rather than dangerous pesticides in our agricultural practices.

Assistance Tuvalu Needs to Promote a Healthy Environment

We recognise that much more can and needs to be done. For instance we currently use borrow pits dug out by the U.S. Army during the Second World War to help in the construction of an airfield - to dump our garbage, because of limited land space.

We know there are more environmentally friendly methods of solid waste management, but due to financial and other constraints we cannot access them.

Already the EEC is providing funding in the areas of coastal reclamation and solar energy, while the Australian Government has promised to supply us with equipment to test the rise in sea level. But there has been a rather slow response from donors to our request for rehabilitation assistance for damage caused by the most recent Cyclone Ofa - which occurred in February of this year.

Therefore we urge the developed countries to come to our assistance in designing and implementing a comprehensive environmental strategy. We need assistance in the training of a number of national experts in environment and climatic changes as well as the strengthening of our national capabilities to monitor onsite climatic changes and sea level rise.

Regional and Global Perspective

On a regional perspective, the Pacific Island governments have demonstrated unity on environmental issues where we have perceived outside activities likely to cause damage to the environment and threaten our small islands and fragile ecosystems.

Our opposition to these abuses by others of our environment has led to our undertaking collaborative efforts in a number of areas.

In particular, I refer to the South Pacific Nuclear Free Zone Treaty, the Convention for the Protection of the Environment and Natural Resources of the South Pacific Region which recently came into force, our actions on Driftnet Fishing and our collaboration through the South Pacific Regional Environmental Programme.

We welcome and encourage the participation of other governments in these important areas where our small island countries have already joined together with some of our larger neighbours to protect our common heritage.

Some of our developed partners present here today may be asking themselves what they can do to help countries like Tuvalu withstand this problem. At a Summit between leaders of the South Pacific sovereign nations with President Bush, held at Hawaii on 27 October, the environment and climatic changes were amongst the contentious issues discussed. At one point, President Bush asked - "What can we, the United States do in order to help countries in the South Pacific?" I replied immediately - "Mr President, can I answer that question?" He looked at me and said - "Go ahead". Then I said - "Well, the United States could help countries like Tuvalu in building coastal protection schemes such as those the FEC are already providing us with though we would need more assistance in this area; we would need to build more water catchments. I went on saying: "I am pretty sure I shall be the only Head of a South Pacific Government that will be present at the forthcoming Second World Climatic Conference in Geneva early next month. At that Conference, Ministers will deliberate on Ministerial Declaration which will, inter alia, include provisions for developed countries to cut down their emission rates of greenhouse gases; for developed countries to provide the necessary resources to developing countries to help them establish the required measures and infrastructures which will lessen the impact of the Greenhouse effect." Then I said, "Mr President, I look forward to the support of the United States on this Ministerial Declaration".

On the same token, and in anticipation of a similar question from our developed partners present here today, I will add the following:

- Provide assistance at the regional level to help us strengthen the South Pacific Regional Environmental Programme
- Help us train our nationals in the areas of environment and climatic changes
- Help us to strengthen both at the national and regional levels our capabilities of monitoring and detecting cyclones and other natural disasters in order to allow us prepare in advance
- Help countries in the South Pacific establish a pragmatic and reliable Disaster Preparedness and Rehabilitation Programme.

Ministerial Declaration

I support the Draft Ministerial Declaration presented to us by our experts merely because I consider it a start of an imperative process towards a Framework Convention on Climate. I must admit however that I am not happy with the commitments made by a number of the industrialised countries which has resulted in a weak Declaration. It appears that science has been ignored by a number of decision makers. I would be content if such stance is done on goodwill. But if science is being deliberately ignored, then I will regard such an attitude as one of total selfishness, and inhuman.

The problem we are addressing right now is of a global nature. We need the cooperation and support of all nations in this world. We in Tuvalu, and this goes as well for our sister countries in the Pacific, the Indian Ocean and the Carribean, contribute little or nothing to the problem and yet we will be the first to suffer. Our survival is at stake.

I may come from a poor and small nation but the fact of life is that my country and its people in particular are a distinct race of our earth planet. Like yourselves, we are citizens of the world - our world. We have our own language and culture. We have a God given right to live on earth. We may be small but we have a spot there to maintain in our biosphere. We contribute to the diversity and balance of the earth's ecosystem. It will therefore be an injustice should we in Tuvalu and the island nations, be denied our right to live in our homeland.

The nations of the developed world carry an enormous burden of responsibility. The problem is clear and the options for action are clear. This Conference therefore presents a clear opportunity for effective and speedy action. These countries which have been contributing to the accumulation of greenhouse gases for so long continue to pollute our atmosphere. I say this with no sense of criticism for past actions - indeed the world has only in the past few years realised the problem. At times I feel that this is God's way

of telling us, human beings, to be more responsible in the maintenance of the earth's balanced ecosystem. Afterall the earth was not created by a human being. And if we do not respond positively to the challenge, then I feel the catastrophe will take place as predicted by science. Such is not at all fair to Tuvalu.

My bigger neighbours in the Pacific - Australia and New Zealand - have been quick to act with decisive national policies. However, the effects of their efforts will not be enough on the global scene. It is up to the large industrialised economies of the world to respond to the clear challenge. Let us all bind ourselves together and pragmatically solve the problem as responsible citizens - brothers and sisters - of the world. We will surely bring about peace and prosperity to all if we join together in addressing the problem.

INTERVIEW

with Giorgio Ruffolo,
Italian Minister of the
Environment

As Chair of the European Community Environment Council Giorgio Ruffolo steered Europe to its recent decision to stabilise carbon dioxide emissions. An Economist who wrote a book 'Social Quality' advocating a link between Ecological and Economic thinking over ten years ago, Ruffolo is now engaged in helping restructure Italy's policies to integrate energy with environment.

ECO How do you evaluate the recent European Community decision to stabilize net emissions?

Ruffolo Winning the commitment of the twelve countries of the European Community was really a success. I hope that it is a good basis for a wider approach at tomorrow's conference. I'd underline the importance of the fact that it was a joint European Community Council of Energy and Environment Ministers that took the decision — that was the first such meeting.

The principal commitment is to stabilise CO₂ emissions at 1990 levels by 2000. The important principle of burden-sharing was also introduced: those countries with large emissions and more advanced industrial development are to make greater reductions so that those with very small emissions and rapidly developing economies can increase somewhat. They have a less strict target.

ECO What about the UK position — does that disappoint you?

Ruffolo The UK stressed its 2005 date. That is included in the deal — implicitly. We insisted that the Community as a whole stabilise by 2000. A further important factor is that the European Commission must now present a Report before the 1992 Conference in Rio de Janeiro, with proposals for reductions in 2005 and 2010. This is in line with the decisions taken at Bergen and Noordwijk.

ECO When will the Commission come forward with its proposals?

Commission to Make CO₂ Reduction Proposals to 2005 and 2010 'Next Year'

Ruffolo It will be next year, 1991. Another important part of the Luxembourg decision is the acknowledgement that fiscal instruments are very important. The Council of Ministers has taken note of that and the Commission will present particular proposals on a carbon tax before the end of 1990. That has been approved by a Resolution.

ECO How long will it be before Europe has a carbon tax?



Giorgio Ruffolo

Ruffolo That's impossible to say but while certain things are discussed for decades, these days we live in times when an issue suddenly changes within weeks or months and decisions are taken very suddenly, particularly on these environmental subjects.

In Italy particularly, within the past three years we have seen 'an acceleration of history' in this subject. Advances have been made in policies on National Parks, urban cities, rivers and seas. We started with the normative changes — laws, directives, and now we have concrete programmes of action. Now we are linking ecology and environment with industrial and economic policy: that is essential. The only successful approach will be to involve environment in economics and economic theory in environment policy.

ECO Do you think the EFTA countries will follow suit?

Ruffolo I think they substantially agree on the position adopted by the Community.

ECO There is an inter Ministerial Commission linking environment and energy in Italy, but the ten year energy plan which is to be reviewed annually, forecasts an 11% increase in Italy's CO₂ emissions by 2000. Is that to be changed?

Ruffolo Yes, we must eliminate this trend. For this reason the Italian Government is studying proposals from the Ministries of Environment, Energy and Industry, to revise the economics of the Energy Plan. This means more efficiency and curbs on emissions. We plan to introduce a tax on CO₂ emissions in 1990: a carbon tax. We must eliminate that 11% in order to stabilise in line with the European position. That means energy saving measures.

If I can put it this way, our train is heading towards the 'Cassandra Crossing': we must make a U turn, reverse the trend to avoid catastrophe.

ECO We featured the massive 600,000 petition recently handed to you by Lega per l'Ambiente asking for a 20% carbon dioxide cut. You said that was unrealistic: do you still feel that, even though the SWCC Science Report says that a

20% cut is technically feasible and immediate action should be taken?

Ruffolo I haven't yet seen the Science Report but I know there are other studies showing that a potential of at least 30% exists for carbon emission reductions in OECD countries — which are cost effective.

ECO I know you are interested in the issue of technology transfer: will you be putting forward a specific plan on this at the Ministerial Conference?

Ruffolo Not a detailed plan but an approach which I hope will be included: we must have an instrument, a Protocol which allows the transfer of technology and assistance from the developed to the developing countries, in the Climate Convention. It could be along the lines of the provisions in the revised Montreal Protocol.

LETTER

Geneva, November 6th 1990

Dear Mr Cotti

You as chair person of the ministerial part of the SWCC will have a most important role. The World is looking to the outcome of this conference, and we are very worried about its results. Ministers will adopt a Declaration, which we hope will call for immediate action, CO₂ reductions by industrialised countries and a strong global convention on climate change. The Scientists of SWCC clearly concluded that there is a scientific consensus on global climate change, on the necessity to act now, notwithstanding existing uncertainties, because impacts on ecosystems and societies are considered to be unprecedented. They also concluded that CO₂ emission reductions of 20% by the year 2005 are not only feasible but also cost-effective foremost of the industrialised countries. Your job is not an easy one — because you will not only have to chair all the statements of heads of State, ministers and delegates, but you will probably also have to chair the discussion on the Ministerial Declaration. This Declaration looks to us more like a non-declaration as all the crucial points on CO₂ reduction targets, dates and the urgent call for immediate action have been removed from the original draft by the negotiators over the weekend. It has to be made sure that the ministers and negotiators really take note of the recommendations of the scientific community and take their responsibility to reduce CO₂ emissions in all industrialised countries. The EFTA and EC countries have to fulfil their commitment to keep these crucial points in and do their best. There are also still problems with square brackets... You see — there is still a lot to do. But we are positive that you, as the Swiss Minister for the Environment and chairman of this conference will do your best. We wish you good luck and all the best — the people of all over the World are looking to this conference and to the ministers to take active steps to solve this global problem. Let's try to give them hope.

Very sincerely yours

WWE Switzerland and NGO

eco

Daylight Robbery

A strange thing happened to the SWCC scientific statement on the way to the Palais. It disappeared. Ministers will not have it to hand.

The draft ministerial statement makes no reference whatsoever to the scientific statement. At the end of the Sunday night — Monday morning marathon session, the political representatives could not even agree to it going before the ministers as an appendix to their report. The civil servants seem happy to let their politicians work in a scientific vacuum.

This means that the politicians will not know that when they argue over action to *stabilise emissions*, the scientists talk of the need to drastically reduce emissions to *stabilise atmospheric concentrations*. Politicians are minimising action while the scientists call for minimising risk.

Politicians will talk of "no regrets" policies; unaware that the Science Report states that the risks of climate change justify reductions in emissions. Politicians will not know that the conference concluded that technically-feasible cost-effective measures exist to reduce carbon dioxide emissions in all countries.

Push Comes To Shove

For years environment groups have criticised the retrograde positions of countries such as the US and UK. At this conference, together with its oil allies, the United States has disgraced itself once again. The UK has been able to hide cuts under the European Community's CO₂ umbrella. But none of these 'villains' are feeling any real pressure. Why? Because, with the honourable exceptions of a few countries such as Australia, New Zealand, Austria and the Netherlands, supposed environmental leaders have backed away from commitments.

It is difficult to get used to the idea that Germany has got 'sticker shock' and dropped its highly moral commitment to tropical forest conservation, now that it sees it will cost real money. Hence the German delegation sat silent at mention of a forest protocol was cut from the draft declaration. And Sweden, host of the 1972 Stockholm Environment Conference, will not commit itself to stabilise CO₂ by 2000. Sweden's name only creeps into the draft list of 'committed' countries by the insertion of the weasel phrase 'aimed at' stabilisation. Hence too, the bizarre twists and turns of the EFTA/EC statement which does not amount to a commitment to stabilise, only a vague wish to do so.

Carlo Ripa di Meana claims that '18

countries of Europe' now lead the world, and that a battle is about to start. But Europe isn't shooting. The Swedes and Germans have prepared a white flag. When push has come to shove, these so-called environmental leaders have let domestic political pressures (Sweden's problems restructuring its energy policy, and Germany's need to finance the old east), push the planet's interests aside.

Fortunately for today the Ministerial Declaration remains a draft. By tomorrow we will know if the Europeans have let the US and others off the hook by agreeing a document with no firm CO₂ target, no energy protocol, and hence (as Brazil then objected), no forest protocol. If this is the future greenhouse realpolitik, then Europe is throwing away its influence as well as its reputation.

OPINION AND ANALYSIS — JAPAN

CO₂ and Japan: A Freeze is Not Enough

by Stewart Boyle, Energy and Environment Programme Director, Association for the Conservation of Energy

Japan is the most energy-efficient nation in the world, has half the per capita carbon emissions of the USA, and "the development and diffusion of energy-saving technology has already run its course". Well, at least this is the case promoted by the Ministry of International Trade and Industry (MITI) in Japan. The truth is somewhat different. Faced with pressure from its Environment Agency and international public opinion, MITI has brought down the country's proposed CO₂ stabilisation target from 16%, to 9% and finally to something between zero and 6% (such is the ambiguity of their recent target announcement - see Léman, ECO no. 6, 5 Nov). Though a welcome first move, there in fact remains a significant energy and CO₂ savings potential throughout the economy.

In the electricity sector, huge forecasts requiring nearly 100GW of new coal, gas and nuclear plant by 2010 largely ignore the potential for demand side efficiency improvements in electrical appliances, lighting and drive motors. Unlike more progressive US utilities, least-cost planning techniques which allow utilities to sell energy conservation and hold or reduce demand, are nowhere present.

In the transport sector, fuel efficiency improvements have reversed since 1983, aided in part by a repeal of the tax system which encouraged smaller, more efficient vehicles. In the face of rising car ownership and congestion levels, new initiatives on fuel efficiency standards, gas guzzler taxes and further investment in

mass transit, are needed.

In other sectors, there has been a stalling of efficiency standards, and the building stock has low efficiency levels in lighting, air conditioning, and insulation. There has also been a significant falling away of public awareness and industrial priority on efficiency due to lower oil prices since 1985.

The recent Gulf Crisis is a reminder to Japan (and the US) that energy efficiency programmes have to be sustained, and directed at sectors other than just industry. Importing 99.6% of its oil, half of which comes from the Gulf of Hormuz, it is a nation which is highly vulnerable to external events such as fuel wars. Between 1973 and 1986, Japan reduced the amount of energy needed to produce a unit of economic output by 34%, better than any other nation. Japan could increase the energy services available to its people significantly in future, without reducing CO₂ emissions. A recently published study by the Royal Institute of International Affairs in London demonstrates that, with more realistic 'business-as-usual' energy forecasts, a greater emphasis of energy efficiency, fuel switching to gas and renewables, CO₂ could be reduced 7% by 2000, 10-20% by 2010, and 25-40% by 2030. The attainment of such reductions would keep Japan at the forefront of technological development. They would also reflect a more honest appraisal of the technical and cost-effective potentials than the current near-freeze in CO₂ target suggestions.

FOCUS

on Eastern Europe

Introduction

by Reinhold Pape

Hundreds of delegates from Western governments, aid agencies and environmental groups have visited Eastern Europe countries during the last months, yet experts in Poland say that only 5-10% of these visits have resulted in concrete assistance. 'Help' to Eastern Europe has become a 'big business', with big promises but very little real assistance. So far, the millions of US\$ given to the Bush-Center in Hungary has mainly been spent on expensive renovations and Italian furniture.

From the 2 million SEK raised in Sweden for a so-called Wistula Project, not a single crown reached Poland. It stayed in the pockets of Western consultants. Big promises concerning the so-called 'Debt for Nature' also failed. But now there is news about hazardous waste sent from the west to the east.

It really is time for Western organisations to start listening to the real needs of Eastern Europe and to respect the opinions of Eastern Europe's new NGOs. Below are some examples of what the environment movement in Eastern Europe is aiming at to do on the environment policy level: A second part of this special focus appears in tomorrow's ECO.

Position Statement of Central and Eastern European NGOs present at the SWCC, November 5, 1990

Due to recent political changes Central and Eastern European NGOs are the first time present in the joint work of representatives of science, policy making, industry, governments and NGOs working together.

Having attended SWCC we support the recommendation of the Conference that "nations should now take steps towards reducing sources and increasing sinks of greenhouse gases through national actions and negotiation of a global convention on climate change" to minimise "risks to society and natural ecosystems".

We want to have "accurate public information" on climate issues as well as "to participate fully in the free exchange and flow of information necessary for the development and technical input" of any convention which coincides with the interest of this region.

On this basis the newly liberated Central and Eastern European nations should be ready to cooperate with those already working on both the assessment of global warming and the strategies for addressing it.

However, for policy implications there is a need to realise that these countries have a special status. Speaking of the environment

developing countries and of differentiated responsibility of the industrialised and the developing countries the conference statement points out that "the problem is largely the consequence of past patterns of economic growth in the industrialised countries". But this is not the case with the countries in Central and Eastern Europe.

Devastation of the environment, and, among other problems, accumulation of greenhouse gases in this region, had causes other than economic growth. These nations were blocked by force into a counterproductive economic system by now bankrupted. Central and Eastern European countries, notwithstanding their cultural and political potential, may suffer from a double burden: after the social and natural resources have been misused by totalitarian regimes for decades, these countries are now facing a possible environmental colonisation by industrial firms seeking an extra profit both from cheap labour and from the inadequate environmental legislation.

Central and Eastern European nations should be given special attention as we are not industrialised, neither do they share most of the problems of the developing countries.

It is true that we have suffered from the lack of financial resources, an overused infrastructure and a fragmented flow of information. But we have neither a population nor a food problem.

These countries have a hidden potential:

- a — somewhat limited — tradition of parliamentary democracies;
- that of a liberal economy;
- a homogeneously distributed school achievement;
- a legacy of universities and learned societies at least 600 hundred years old;
- and the remnants of a civil society still existing in collective memory

These capacities are there. They need no establishment, only revitalisation. This hidden potential, if properly managed and supported, means these nations will soon be able to catch up with industrialised countries with a better environmental performance — therefore they may contribute to tackling global problems, too.

It should be noted by the ministerial session, that according to the NGO statement to SWCC, November 1, 1990 "The economic restructuring currently occurring in Eastern Europe presents a critical opportunity to introduce energy-efficient technologies that will benefit both the environment and the economies of these countries."

Work on energy conservation in this region will fulfil the recommendation of the SWCC

risk are also desirable on other grounds."

The community of environmentally responsible countries should help these newly and freely elected, still vulnerable governments to find environmentally sound ways of managing their economies. This kind of investment may bring short-term returns both nationally as well as on a globally.

The support should come in the form of special policies, conventions, codes of industrial behaviour to stop environmental exploitation and a transfer of know-how to rationalise, or swaps of nature-for-debt. Any differentiated policies should meet the ambition and the efforts of these nations to cope with their difficulties, to re-enter into the European community as well as to run a less polluted economy and work on a healthy and effective society.

Jadwiga Taylor Rusworth,
Social Ecological Institute, Poland

Dr Judit Vársárhelyi,
Independent Ecological Centre, Hungary

Igor Halama,
Green Circle, Czechoslovakia

Black Triangle – Time for Action

by Reinhold Pape

Alarming news has reached the public in recent years about the degradation of the environment in Central Europe in the border region of Czechoslovakia, Poland and East-Germany. Here the effects of heavy pollution have not only become obvious by destroyed forests and landscape but also by its direct influence on human health. Life expectancy is in some parts of the region 4-5 years lower than the average and scientists believe that the causes are the polluted living-environment. The region is called the 'Black Triangle' because here the basis for the energy production of the 3 countries is abundant - brown coal, which is burned in large coal power stations, heavy industrial plants and in communal heating without any cleaning of the exhausted gases and dust.

The region is also typical of a very old and insufficient heavy-industry structure without any environmental protection measures and which have caused strong local environmental protection measures and which have caused strong contamination of soils, vegetation and food products. Environmental groups from the three countries are now preparing for a campaign to get national and international attention in order to solve the problems of this region. This month they issued a 'Black Triangle Declaration'

released through the Sierra Club at the White House Conference in April 1990.

stratégies et choix politiques des à présent envisageables au niveau de la Communauté

Extended Page 17.1
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7

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TOTAL P.17

**Black Triangle Declaration
NO Strategy on Transboundary Air
Pollution within Czechoslovakia,
Germany and Poland
Priorities for Action**

- decentralisation of decision-making processes for environmental legislation;
- de-monopolisation of industrial structures and resource management
- new energy strategies based on energy saving and efficiency, the potential for de-centralised energy production and renewable energy sources, recognising that nuclear power is not an appropriate alternative;
- incorporation of environmental policy into all aspects of energy policy and industrial policy at the national, regional and local level;
- implementation of comprehensive environmental education programmes to include decision-makers, the public, teachers, students and children;
- participation of NGOs in decision-making;
- free access to all information on environmental, economic and social issues;
- an immediate clean-up of environmentally damaging industries and the development of an energy-efficiency strategy;
- a long-term strategy for sustainable development

**Recommendations for National and
International Policy**

- 'special focus' strategies by national governments to provide information, resources and management to solve environmental problems;
- full discussion of the role of coal in the region including economic, environmental, social and institutional aspects paying particular attention to implementation of new clean coal technologies;
- emission standards for all new industry and motor vehicles;
- limits on road transport, to give priority to public transport;
- formation of an international 'league of friendship' between local governments in areas of environmental degradation throughout Europe;
- renegotiation and strengthening of the existing trilateral agreement on transboundary air pollution between CSFR, Germany and Poland.

By: Polish Ecological Club (Poland); Grüne Liga (Germany); Arche Netzwerk (Germany); Children of the Earth (CSFR); Brontosaurus

Correction

In yesterday's ECO we said the "Talking Points" brief was issued by US Administration at the Bergen Conference. In fact, it was accidentally released through the Sierra Club at the White

FOCUS on technology

Fusion: Promise Without Performance

by Jim Woolridge, *Earthwatch, Ireland*

The greatest share (about 50%) of EC energy R&D funding goes to nuclear fusion. This option also attracts large funding in other parts of the developed world. By 1991 approximately 5 billion ECU will have gone to EC fusion compared with a total of less than 300 million ECU to all renewable projects — a bias of about 17 to 1.

Yet fusion has failed to chill a single can of beer or save so much as a thimbleful of oil — by comparison renewable projects have generated much usable power and replaced considerable amounts of fossil fuels. So, we have the anomaly of one area of technology being cash glutted and non-productive while another whole set of technologies are highly productive but starved of cash. It would seem that in the area of energy R&D, success is penalised while failure is rewarded.

Who can seriously advocate such a way of allocating resources? Energy funding should be allocated in precisely the opposite fashion — with resources being shifted towards technologies with proven performance, and away from those that neither produce usable power nor replace fossil fuel inputs. This could be done via periodical review, with an accelerating shift of resources towards successful technologies until they can leave the shelter and make their own way in the marketplace.

Confusion

Such a review procedure need not, and indeed should not, imperil long-term core funding for any technology: it is unwise to subject basic work to the criterion of performance. Equally, it is also unwise to confuse basic scientific work with the highly practical task of developing

new energy supply options. There is little, if anything, in the record to suggest other than that fusion is a research topic masquerading as a supply option.

Under the pressure of climate change, can we any longer afford the luxury of massive investment in fusion for usable returns? Investing in non-productive supply options is a dead end — money poured down a black hole. On the other hand investment in productive options generates wealth — investment in renewables also gives massive pollution savings.

Absurd

So far, there has been an almost inexplicable neglect of renewables in the debate around climate change; we need only think by contrast of the tremendous (and absurd) fuss made about nuclear power as the 'solution' to the greenhouse problem. The point has been well and often made that investment in energy efficiency is many times more cost effective than nuclear investment in terms of cutting CO₂ emissions.

We now need also to look at the investments being made in fusion research and note that investment in renewables is many times more productive. Indeed, so far, it has been infinitely more productive! Fusion hasn't actually produced anything.

We must also bear in mind that even in theory, fusion, which is the highest of high-tech and enormously centralised and very expensive, is even in theory, a non-starter for the developing world. By contrast, renewables are often the only viable supply option in many areas, particularly for small scale use in a diffused population situation.

La Communauté européenne doit passer aux actes!

Annie Bonnin Roncerel

Après s'être prononcée sur la stabilisation des émissions de CO₂ en 2000, la Communauté européenne doit maintenant passer à l'action et proposer des solutions cohérentes et applicables.

Une première étape est la réforme profonde de son propre budget. Le 'Climate Network — Europe' (point de rencontre et d'information des organisations non-gouvernementales travaillant dans le domaine de l'effet de serre) a entamé une analyse des différentes lignes budgétaires de la Communauté européenne. Il s'agit d'identifier celles qui vont dans le sens, celles qui sont en désaccord et celles qui sont en complète contradiction avec les politiques qui devraient être menées afin de combattre les risques liés à l'effet de serre.

Sur la base de cette analyse, différentes stratégies et choix politiques des A. présent

européenne seront proposés. Tout en restant dans les limites financières imposées à la Communauté, des options concrètes seront présentées, secteur par secteur, en particulier dans le domaine de l'énergie (fondées sur les résultats des recherches les plus récentes dans le domaine de l'efficacité énergétique), des transports et de la coopération internationale. Des recommandations seront formulées à la lumière des problèmes identifiés dans le domaine de l'agriculture.

Le document final sera présenté à Bruxelles par les organisations non-gouvernementales du 'Climate Network — Europe' la première semaine de décembre, lors du vote du budget de la Communauté européenne par le Parlement. Pour recevoir ce document, prière de contacter: Climate Network — Europe, 98 rue du Trône,

20