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UNEP

WORLD CLIMATE PROGRAMME PUBLICATIONS SERIES

WMO/UNEP INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

REPORT OF THE FIFTH SESSION
OF THE WMO/UNEP INTERGOVERNMENTAL PANEL
ON CLIMATE CHANGE (IPCC)

Geneva, 13–15 March 1991

IPCC - 7

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1. OPENING OF THE SESSION (agenda item 1)

1.1 Prof. Bert Bolin, the Chairman of the WMO/UNEP Intergovernmental Panel on Climate Change (IPCC) opened the fifth session of the Panel at 09.40 hours on Wednesday, 13 March 1991 at the Palais des Nations, Geneva, Switzerland. He welcomed the delegates of governments and representatives of intergovernmental and non-governmental organizations.

1.2 The list of participants is given in Appendix A. The following intergovernmental and non-governmental organizations had been invited by the Chairman so the Panel could be informed of their activities and views relevant to specific agenda items:

Intergovernmental Organizations

Food and Agriculture Organization of the United Nations (FAO)
International Atomic Energy Agency (IAEA)
International Tropical Timber Organization (ITTO)
Organization for Economic Co-operation and Development (OECD)
International Energy Agency (IEA)

Non-governmental Organizations

International Institute for Applied Systems Analysis (IIASA)
Royal Institute of International Affairs (RIIA)
Stockholm Environment Institute (SEI)
Tata Energy Research Institute (TERI)
World Energy Council (WEC)
World Resources Institute (WRI)

1.3 Opening statement by Professor G.O.P. Obasi, Secretary-General of the World Meteorological Organization (WMO) (agenda item 1.2).

After greeting the participants, Prof. Obasi went on to say: "May I take the occasion to congratulate the Panel as a whole, and each of you individually, for a truly pioneering effort in completing the First Assessment Report in time and in a manner that has received universal praise.

Much has happened since I spoke to you in August 1990.

Your First Assessment Report was reviewed at the Second World Climate Conference, where Heads of State and Government, ministers and other high officials from one hundred and thirty seven countries were present. The Conference agreed that the scientific conclusions in your report reflected the international consensus of scientific understanding of climate change and congratulated you on the report.

The report was then submitted to the 45th session of the United Nations General Assembly.

In December 1990, the General Assembly noted the important work which you had accomplished and established the Intergovernmental Negotiating Committee (INC) to negotiate a framework convention on climate change. The INC held its first session last month in Chantilly, near Washington D.C.

Thus the pace of events has been brisk. It will accelerate still further in the near future as preparations continue for the UN Conference on Environment and Development, in Brazil in June 1992, and as the negotiations within the INC concentrate on substantive matters.

During the next three days you will concentrate on formulating your future work and meeting the needs of the INC. In this connection, I should like to mention that the Executive Council of WMO and the Governing Council of UNEP have requested Dr. Tolba and myself to arrange for the continuation of IPCC to undertake, inter alia, the necessary work in support of the negotiations and to make further assessments of the climate change issue at appropriate intervals.

As you may recall, at the end of 1988, the General Assembly of the UN, by its resolution 43/53, requested, inter alia, that a comprehensive review be carried out on the identification, and possible strengthening, of relevant existing legal instruments having a bearing on climate, and on the elements for inclusion in a possible international convention on climate. These tasks were undertaken by IPCC Working Group III: with the establishment of the INC, the tasks will become an integral part of the negotiations. The other tasks set out in 43/53 are of a continuing nature.

At the end of last year, the General Assembly in its resolution 45/212 setting up the Intergovernmental Negotiating Committee, requested the head of its secretariat to cooperate with IPCC to ensure that the Panel can respond to the needs and requests for objective scientific and technical advice made during the negotiating process.

Given this background, I should like to use this occasion to share some of my thoughts with you.

Firstly, it is clear that your plan of work should accommodate tasks in both the short and long terms. By short term, I mean the duration of the negotiations on the framework convention, and any legal instruments, such as protocols, that may come to be associated with it. In the long term, you may think the focus should be on further assessments of climate change; indeed, you may wish to consider a relatively short assessment update by 1994.

Secondly, the results of your work will be applied much more effectively if the developing countries can take a more active and substantially increased part in your activities. The budget request for 1991 and 1992 proposes such an increase. I

believe donor governments understand the reasons for the request and I urge them to contribute generously to the Trust Fund.

In this connection, I should like to acknowledge the positive contribution of the series of seminars which the IPCC Secretariat has been arranging for high level governmental officials in those developing countries that have expressed a wish to have them. I encourage further financial contribution in support of such activities.

Thirdly, as the Executive Head of a scientific and technical agency, I should welcome your paying particular attention to identifying in your assessment tasks the gaps which need to be bridged in the current and planned programmes for research and monitoring related to climate and climate change. Such information will also be useful in the proposed plans for the development of the Global Climate Observing System as requested by the Second World Climate Conference.

In conclusion, let me assure you that I will continue to assign very high priority to the activities of both the IPCC and the Intergovernmental Negotiating Committee."

Prof. Obasi concluded by wishing the participants a pleasant stay in Geneva and a productive and successful session.

1.4 Opening statement by Dr. M.K. Tolba, Executive Director of the United Nations Environment Programme (UNEP) (agenda item 1.3).

The following statement of Dr. Tolba was read out by Mr. M. Uppenbrink, Director of the European Office of UNEP:

"Prof. Obasi, Secretary-General of WMO, your Excellencies, Distinguished Guests, Ladies and Gentlemen,

I feel honoured to have an opportunity once again to express the deep appreciation of the United Nations Environment Programme, to you, Mr. Chairman for the able manner in which you have steered the IPCC ship upto this time. I wish to also to express my appreciation and great sense of indebtedness to the chairmen of the three working groups Dr. John Houghton, Prof. Yuri Izrael and Dr. Fred Bernthal for the excellent work done and the support I know they invariably gave you as chairmen through the difficult time of preparing the first assessment report. To my friend and colleague Mr. Jean Ripert who chaired the Special Committee on the Participation of Developing Countries I wish to express a special word of thanks.

Mr. Chairman, I have on IPCC matter had the closest cooperation with my colleague Prof. Obasi, and I am happy to point out that ours has been an excellent example of cooperation between two organizations within the United Nations family. For this and many other cooperative ventures I wish to thank Prof. Obasi and his staff in WMO.

Ladies and Gentlemen, the IPCC process is now at crossroads. You have produced what many have observed is the most authoritative report on our understanding of the science of climate change, its impacts, and policy response options. You have demonstrated the power of collaborative effort. The first assessment report represents the work of over one thousand renowned scientists from both the north and south. You have established that our planet is endangered by our commitment to global warming. Global temperature is expected to rise, and along with it sea level. Species are imperilled by expected temperature rise while some small island States are threatened with complete annihilation by expected sea level rise.

I appreciate that there are uncertainties and knowledge gaps. The job is therefore not complete. The Governing bodies of both UNEP and WMO have recommended and approved the continuation of IPCC. As we start a new chapter in the activities of the IPCC, we must address these scientific uncertainties in order to better understand the possible impacts, and facilitate cost effective response strategies. The uncertainties are all the more significant because of the possibility that your current estimates of both temperature and sea level rise could be low. The possibility of surprises can be sobering. Sudden and abrupt changes in severe climate events could have far more serious consequences than we are able to anticipate now.

Mr. Chairman, the United Nations General Assembly has assigned specific tasks to the IPCC as reflected in its resolution 45/212. You are expected, inter alia, to provide the most objective analysis of scientific and technical assessment of the issue of climate change, and to provide such assistance on these matters to the Intergovernmental Negotiating Committee in response to its needs and requests.

As negotiations proceed on a Framework Convention, the IPCC can be expected to play an important role of updating the Intergovernmental Negotiating Committee on the current state of the science, and the consequent adjustment of what impacts can be expected. Additionally, I believe there will be a need to evolve emission inventories, assess energy demand and supply and what options exist that would stem global warming. You will need to assess further the vulnerability to sea level by states, and facilities. Particular concern is in this respect will need to be focused on small island States.

Ladies and gentlemen, I have already made reference to existing uncertainties and knowledge gaps and the Panel's obligation to address those gaps. I am aware, as a scientist, that such gaps are not bridged overnight. But I am also aware that if the right questions are asked in good time we have the collective scientific capacity to answer them. The first assessment report, prepared as it was in less than 24 months, is proof of that capacity.

I note from the agenda that you will be discussing your future work to include for example the prediction of regional distribution of climate change and associated impacts studies, how to assess net greenhouse gas emission, the question of forests, emission scenarios etc. These are issues that the Panel must address, issues that must be removed as excuses for inaction.

I am aware of the problems of agreeing to a comprehensive convention on climate change, but I believe that the IPCC could play a key role in pointing out measures that can be taken which are beneficial in their own right, while significantly reducing greenhouse gas emissions. Energy efficiency is an example of such a measure. But I also believe that in order to stem global warming some sacrifices must be made. It will not be necessarily cheap nor comfortable. There is a price to pay for our past unsustainable use of our natural resources. I believe we must start off with the objective of stabilizing carbon dioxide emissions as a first step towards stabilizing the global climate. We must, therefore, take the necessary steps, no matter how uncomfortable it is to achieve that objective. This is why I have advocated setting targets for emission reductions. If we do not do something now, given the existing commitment, it may not be possible to achieve climate stabilization.

Mr. Chairman, let me come to the question of the participation of developing countries in the work of the IPCC. The preparation of the first assessment report had considerable time constraint. Consequently, meetings were organized in a hurry, subgroups were assembled with limited time to accomplish very precise tasks. I am aware that the developing countries felt they were not fully integrated into the IPCC process, as many meetings coincided with each other.

The result was a sense of frustration by some developing countries who may not have had the necessary human resource depth to be represented in meetings held simultaneously in different countries. I am happy however that the participation of developing countries in the IPCC meetings improved with time and it is my hope that it will be improved further. This is particularly important because, if they are going to be equal partners in the negotiation process they must do so from an informed position. As I see it, the IPCC process could be a vehicle for imparting such information. It is important for two other reasons:

- (i) the developing country representatives are the best suited to assess the contextual significance of climate change impacts, and the best response strategies, and
- (ii) any convention must incorporate as many countries as possible from both the north and south if it is to be an effective vehicle in stemming global warming. I know that the increased participation of developing countries in the work of the Panel will put increased

burden on the Trust Fund and would appeal to governments to pledge more funds to the IPCC Trust Fund or support bilaterally the participation of developing country representatives in future meetings of the IPCC.

I note from the report of the Secretary that both the United Kingdom and Norway have provided funds to support seminars for the diffusion of IPCC findings to top level policy makers. I want to take this opportunity to thank the two governments for this support.

Mr. Chairman, Ladies and Gentlemen, as I said earlier, your work has reached the crossroads between the first assessment and future assessment reports. You have scored high marks for the first assessment report and set standards and raised expectations. As you move onto your future work plan, the public and your own colleagues will expect nothing less than continued excellence. I have no doubt that you will live up to the established high standards. Your record of scientific integrity and established independence will place you in good stead to advise the Intergovernmental Negotiating Committee and afford you an opportunity to foster a global partnership in addressing the global warming issue. I wish you all the best. Thank you".

1.5 Opening statement by Professor Bert Bolin, Chairman, IPCC (agenda item 1.1).

1.5.1 The Chairman remarked that IPCC was at the crossroads and reported that he was encouraged by the discussions at the third session of the IPCC Bureau (Washington, D.C., 15 February 1991) that was held immediately following the first session of the UN Intergovernmental Negotiating Committee (Chantilly, USA, 4-14 February 1991). His further remarks would adhere to the outcome of those discussions.

1.5.2 He recalled that IPCC was an independent body, sponsored by WMO and UNEP, and in such a capacity set its own agenda, while remaining ready to meet the needs and requests of the Intergovernmental Negotiating Committee (INC).

1.5.3 He emphasized that the participation by developing countries in IPCC was most essential and that every effort should be made to improve the situation from one session to the next. He added his own appeal to that of the Executive Heads of WMO and UNEP for further financial contributions to the IPCC Trust Fund to achieve the improvement.

1.5.4 He pointed out the need to conduct business in an orderly manner. He would, together with the IPCC Secretariat, see to it that meetings were announced and papers prepared in an orderly manner, and that overlaps of meetings were avoided.

1.5.5 He reminded the Panel that IPCC was not a negotiating body and that it was most essential to maintain that view, and as Chairman, he would constantly strive to ensure that the task of the Panel remained one of assessment of the facts that go into

understanding climate change, its impacts, and possible alternative actions and their implications.

1.5.6 He hoped that there would not be much need for decision-making by voting in IPCC. If sound scientific/technical arguments led to different results in an open exchange of ideas, then this was an indication of genuine uncertainty; that uncertainty should be recorded and this principle must be upheld very strongly. In this process, it was most important that the developing countries were given adequate opportunity to take part because the process then led to mutual learning, benefiting not only the developing countries but also the developed countries. While he would encourage the scientific arguments being aired to reach a consensus on scientific issues, if a true consensus could not be obtained, there was a need to consider the uncertainty that this implied. So orderly conduct of business in a free and scientific manner with participation by all or as many as possible should be the IPCC working mode.

1.5.7 He stressed the importance of distinguishing between short-term and long-term aims. It was not yet time to make another complete or even close to a complete assessment. Therefore an important task was to select those key issues that needed to be addressed urgently in the short-term and provide some results that could be useful in a negotiation process; that meant preliminary results should be available by September-December of 1991 and final and firm conclusions in early 1992. But a long-term agenda also needed to be discussed, not finally and firmly, but with a view to completing the second assessment in 1994-1995.

1.5.8 He concluded by reminding the Panel that altogether there were seven issues to be discussed in the session. Proposals had been invited on them by him from the members of the IPCC Bureau.

1.6 The Agenda, as amended and approved by the session, is given in Appendix B.

2. IPCC WORK PROGRAMME FOR 1991 AND BEYOND (agenda item 2)

2.1 IPCC work procedures (agenda item 2.9)

2.1.1 The action of the Panel on this agenda item is placed here in the report, out of sequence, because of its importance.

2.1.2 The Panel adopted "Principles Governing IPCC Work" to guide its future work procedures. These principles are reproduced below in their entirety.

PRINCIPLES GOVERNING IPCC WORK

Introduction

1. The IPCC shall concentrate its activities on the tasks allotted to it by the relevant WMO Executive Council and UNEP Governing Council resolutions and decisions.

Organization

2. The IPCC Bureau shall reflect balanced geographic representation. IPCC Working Groups and any task forces established by Plenary shall reflect balanced geographic representation with due consideration for scientific and technical requirements.
3. IPCC Working Groups and any task forces constituted by the IPCC Plenary shall have clearly defined and approved mandates and work plans as established by the Plenary, and shall be open-ended.

Participation

4. Invitations to IPCC Plenary, Working Group and task force sessions shall be extended to Governments and other bodies by the Chairman of IPCC.
5. Experts from WMO/UNEP Member countries or international, intergovernmental or non-governmental organizations may be invited in their own right to contribute to the work of the IPCC Working Groups and task forces. Governments should be informed in advance of invitations extended to experts from their countries and if they wish may nominate additional experts.

Procedures

6. In taking decisions, drawing conclusions, and adopting reports, the IPCC Plenary and Working Groups shall use all best endeavours to reach consensus. If consensus is judged by the relevant body not possible: (a) for decisions on procedural issues, these shall be decided according to the General Regulations of the WMO; (b) for conclusions and adoption of reports, differing views shall be explained and, upon request, recorded.
7. Conclusions drawn by IPCC Working Groups or task forces are not official IPCC views until they have been discussed and accepted by the IPCC Plenary.
8. Invitations to IPCC Plenary, Working Group and task force sessions should be extended at least six weeks in advance.

9. Major reports, basic documentation and other available reports for consideration at IPCC Plenary and Working Group sessions shall be made available by the IPCC Secretariat four weeks in advance, to the extent possible in all official UN languages. Working papers shall be circulated as far in advance as possible.
10. Interpretation into all official UN languages should be provided for all IPCC Plenary and Working Group sessions.
11. The sessions of IPCC Working Groups and task forces shall be co-ordinated with other international meetings, including sessions of the INC and UNCED Preparatory Committee.
12. These principles are to be reviewed at least annually and amended as appropriate.

2.2 IPCC work programme for 1991 and beyond

2.2.1 The Panel expressed its readiness to respond to the needs and requests of the UN INC.

2.2.2 The Panel decided to undertake the tasks 1 to 6 as specified below in its continuing work programme. It also decided to form Steering Groups for its Working Groups to guide the details of their respective work programmes. However, it did not complete its consideration of the memberships of the Steering Groups. And, in order that work on the approved tasks could begin without delay and in an interim measure, it agreed to authorize the Chairman to arrange for the formation of ad-hoc Steering Groups from among those members proposed by the Chairmen of the Working Groups and those members requesting participation from the floor. It further decided, at the request of the Chairman, to continue with the current IPCC structure until it undertook a review of that structure.

2.2.3 One delegation stressed that an item of paramount importance in the IPCC work programme should be the quantitative assessment of the uncertainties associated with model-produced climate change estimates.

2.3 Task 1: Assessment of national net greenhouse gas emissions (agenda item 2.1)

2.3.1 The Panel noted that this topic divides naturally into three subsections, though with significant overlap. All three subsections should be under the guidance of a Steering Group with a balanced representation of governments; this Steering Group operating under the aegis of Working Group I should ensure the participation of Working Groups II and III as appropriate in this task.

2.3.2 Subsection 1: Sources and sinks of greenhouse gases

2.3.2.1 Objective

The objective here was to improve the quantitative assessment of all sources and sinks (anthropogenic and natural, atmospheric, terrestrial and oceanic) of all the greenhouse gases (carbon dioxide, methane, nitrous oxide, halocarbons), tropospheric ozone precursors (carbon monoxide, nitrogen oxides, volatile organic compounds,) and sulphur gases.

2.3.2.2 Work plan (subject to resources being available)

The Panel decided to request the OECD, in cooperation with IEA and other international organizations and regional centres, to assist in the improvement of methodologies under the guidance of the Steering Group of Working Group I and in accordance with the work plans adopted below.

Short term

- i) Estimates to be reviewed and revised of current and historic (last century only) global sources and sinks (net emissions) of all greenhouse gases and precursors. Initial workshop on the subject to be scheduled about late June 1991 in the United Kingdom.
- ii) All countries requested to submit to IPCC available inventories of greenhouse gas and greenhouse gas precursor sources and sinks (latest September 1991).
- iii) Review and revision to be completed under (i), using data submitted under (ii) where available; halocarbon inventories should be provided from assessments under the Montreal Protocol (end 1991).

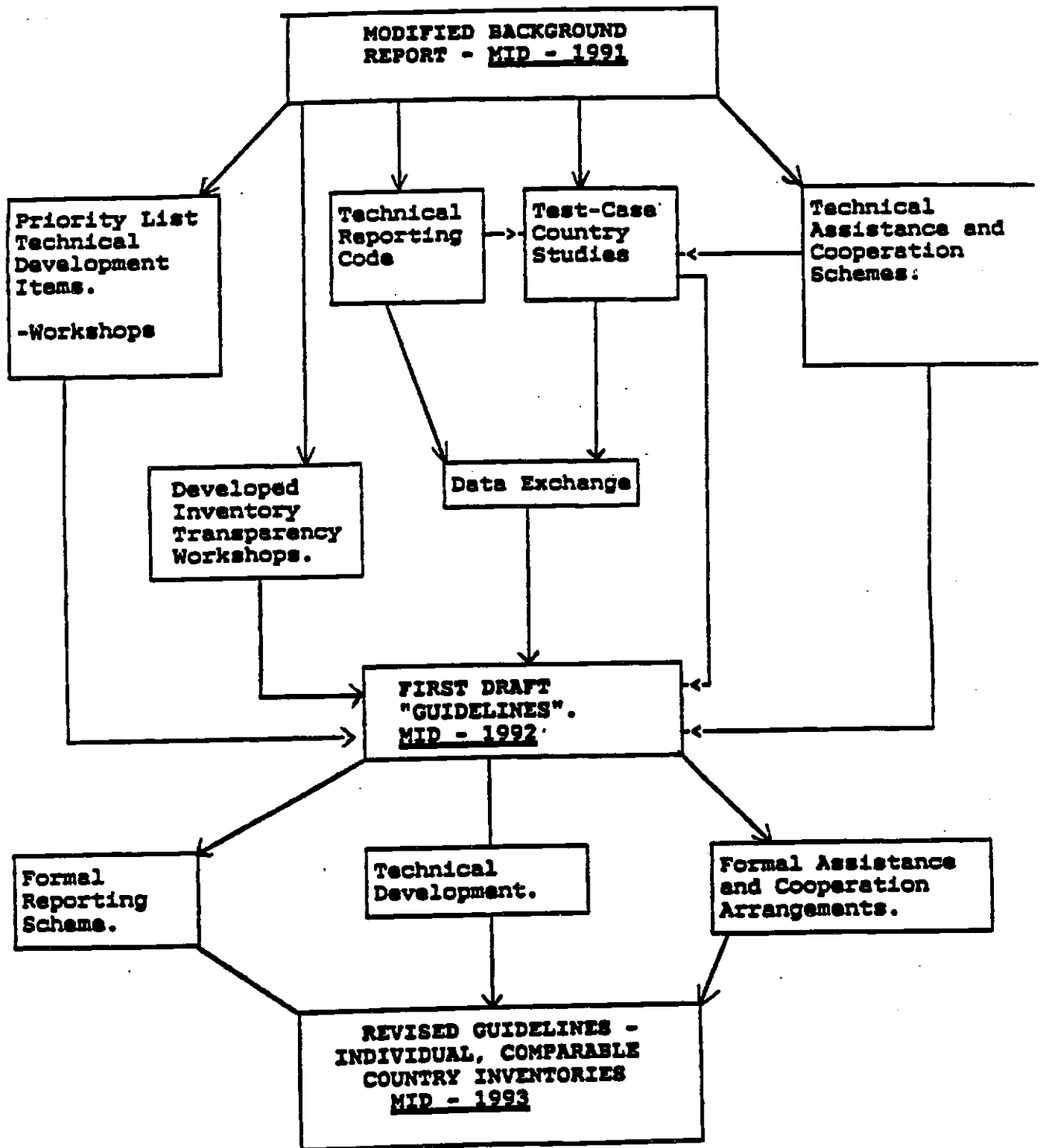
The result of this effort would be an estimate of overall global emissions and preliminary national anthropogenic net emissions that can be compiled with sufficient scientific confidence, including the sectoral contributions, with uncertainty margins where appropriate.

Long term

- i) IPCC to distribute Stage 1 methodology (which covers CO₂, CH₄, N₂O and volatile organic compounds) developed after the OECD Paris meeting, to all countries for their consideration by mid 1991.
- ii) Countries to pursue the development of emission inventory guidelines and individual country inventories according to the schedule appearing in Figure 1.

FIGURE 1

**GREEN-HOUSE GAS EMISSION INVENTORIES FOR INDIVIDUAL COUNTRIES -
"GUIDELINES" WORK PROGRAMME AND SCHEDULE.**



- iii) Stage 1 methodology and methodologies developed by other organizations (such as UN-ECE, EC, etc.) and for other gases (e.g., ozone precursors) to be reviewed and, along with new information on natural and anthropogenic sources and sinks, to be incorporated as appropriate into a "draft IPCC" methodology by mid 1992. In order to avoid similar multiple international inventories, the final guidelines may be based on work elsewhere and should provide as far as possible common recommendations.
- iv) Countries to submit to IPCC available interim past and present inventories using "draft IPCC" methodology.
- v) Basis of agreed "IPCC" methodology to be established by mid 1993.

The aim here was to arrive at national inventories using agreed "IPCC" methodology by end 1993.

2.3.3 Subsection 2: Global Warming Potentials (GWPs)

2.3.3.1 Objective

The objective here was to further develop the concept of the Global Warming Potential, as an index of CO₂-equivalence, for all greenhouse gases and their precursors; to compile an updated table of GWPs, with associated uncertainties.

2.3.2.2 Work plan

This work would exploit the parallel studies of GWPs being undertaken by the International Montreal Protocol Ozone Scientific Assessment and would consist of:

- i) Initial workshop in late June 1991 (UK) in order to assess:
 - * optical properties of each gas;
 - * the removal (sink) processes for each gas;
 - * the impact of each gas on the radiation balance of the atmosphere;
 - * the scientific basis for using different time horizons.
- ii) Final assessment including review by end of 1991.

2.3.4 Subsection 3: Emissions scenarios

2.3.4.1 Objective

The objective here was to update existing global scenarios of greenhouse gas and precursor emissions in the light of recent developments and adopted policies. This would enable a range of climate change predictions to be carried out.

2.3.4.2 Work plan

Short term

- i) Based on generally-accepted ranges of demographic, economic and resource-use projections, updated GHG scenarios to be developed, taking account of recent developments (e.g. forestry scenarios, EIS reference scenarios and the Montreal Protocol). Initial workshop late June 1991.
- ii) Final assessment, including review, by February 1992.

Long term

- i) Methods and data to be reviewed (December 1992).
- ii) Regular revisions undertaken of scenarios at a global and regional level (ongoing).

2.4 Task 2: Predictions of the regional distributions of climate change and associated impact studies, including model validation studies (agenda item 2.2)

2.4.1 The Panel noted the widespread and urgent requirement that existed for information on probable future climate changes at the regional and local levels and for corresponding assessments of regional and local ecological and socio-economic impacts. There was also a need to integrate regional scale analyses into global impacts for sectors such as agriculture and forests.

2.4.2 The Panel recognized that some of the spatial and temporal variability of climate change may well be of a stochastic nature and therefore not predictable. It is obviously important to try to understand to what extent and in which way this may influence current ability to predict the regional characteristics of an anthropogenic climate change. The Panel emphasized that this aspect of the problem be studied and that the implications for predictions of future regional impacts of climate change be analyzed.

2.4.3 With a view to preparing a comprehensive revised assessment in 1994-1995, the Panel agreed that the linkage between its Working Group I initiatives on regional climate change prediction and its Working Group II activities on regional impact assessment needed to be strengthened and made more effective than was possible in the compressed time-scale of the First Assessment Report.

2.4.4 In its work, Working Group II should collaborate with and draw upon ongoing international impacts assessment activities undertaken through such programmes as the World Climate Impact Studies Programme of UNEP (which is a part of the World Climate Programme or WCP).

2.4.5 Work plan

Short term

- i) Update of regional climate models (to be undertaken by WG I through the WG I Steering Group)
- * A first draft to be compiled by correspondence, and to be completed by 30 June 1991.
 - * Comments from review, and additional contributions based on further developments in the science, to be incorporated in a second draft for completion during a WG I workshop to be run in tandem with the meeting of the WCRP Steering Group on GCMs; this workshop to include observers from WG II to facilitate information transfer to the long term studies and to highlight to the modellers those climate factors to which ecological and other natural resources are particularly sensitive.
 - * The revised second draft from the above workshop to be sent to member countries of IPCC for peer review and for approval (with any necessary amendments) at the WG I meeting (tentatively scheduled for January 1992) and at the IPCC seventh plenary session (tentatively scheduled for February 1992).
- ii) Analysis of sensitivity to regional climate change (to be undertaken by WG II through the WGII Steering Group)
- * The regional impacts assessments that are underway to be identified as well as gaps needing further work.
 - * Work towards developing guidelines for assessments of integrated and sector impacts to be initiated.
 - * Regional/national components of monitoring programmes which could be used for impact studies to be identified.
 - * Report summarizing the status of this work to be produced by April 1992.

Long term

- i) Update of regional climate models (WG I)
- * An updated assessment of global and regional climate models to be undertaken in 3-4 years, this timescale subject to review by IPCC in the light of progress on global and regional modelling.

ii) Analysis of sensitivity to regional climate change
(WG II)

- * Objective of preparing by 1994-1995 a global assessment based on a synthesis of regional impact studies, with the following subtasks:
 - preparation in collaboration with WG I of a range of realistic climate change scenarios based on GCM results or other approaches, addressing the critical factors noted earlier;
 - development of robust estimation methodologies for integrated and sectoral analyses (including agriculture, land use, ecosystems, water and health) and minimum criteria for acceptable assessments of changes in productivity, resource availability and associated socio-economic impacts taking into account adaptation and technological change that may occur in the longer term;
 - identification of data necessary for more credible estimates of regional ecological and socio-economic impacts and to identify baseline conditions;
 - application, as appropriate, of such methodologies to case studies;
 - preparation of a synthesis report.

2.5 Task 3: Issues¹ related to energy and industry (agenda item 2.3)

2.5.1 The Panel recognized that the subtasks related to this task needed to be listed in the order of their priority so that those that could be completed in the short term, could be identified. This should be taken up at the first meeting of the task force dealing with this task.

2.5.2 Purpose

The purpose of the task was noted as that:

- i) to fill significant gaps in the analysis achieved to date on energy and industry sector responses to limit climate change;

¹ Here "energy and industry sector" is used to mean the end-use sectors (industry/manufacturing, residential/commercial, transport) as well as production, transmission and transformation of energy. The technologies referred to here encompass greater energy efficiency, fuel substitution, greenhouse gas removal, energy supply and use and others.

- ii) to begin new areas of analysis and suggest areas of research which were too difficult to address in the first phase of the IPCC.

2.5.3 Timetable

The programme should be developed in two parallel tracks:

- i) short term (over the next 9 months);
- ii) longer term (over the next 2 to 3 years); initial peer review of EIS report to be conducted within two months; individual reports be issued for peer review on their completion (estimations of their timing are contained in the subtask descriptions below); a summary report of work completed would be issued by the end of 1991.

2.5.4 General procedure

The general procedure to be followed was agreed to be as follows:

- i) comprehensiveness, non-duplication and peer review, including global search and assessment of available studies and soliciting contribution of experts;²
- ii) synthesis and analysis of existing work; where available, comparative analyses to be included;
- iii) assuring relevance to the full range of participating policy-makers by encouraging full coverage of analysis to countries in different stages of energy development³.

² At the time of writing, the following organizations had come forward to offer some form of assistance: AEI, IAEA, IEA, IIASA, IPIECA, KEEI, RIIA, SEI, TERI, UN-ECE, UNEP and WEC. Other organizations (e.g. OAPEC, OECD DAC, OLADE, OPEC, UNDP, UN-ESCAP and World Bank) were known to be working on relevant aspects and might be drawn into the effort.

³ For example, countries with no centralized energy delivery systems (electricity or liquid fuels); countries with substantial development of energy supply and delivery systems underway; developing but energy-resource-rich countries; countries with economies in transition with mature, but obsolete infrastructure and energy supply systems; industrialised OECD countries. These categories would be further explored.

2.5.5 Subtask 1: Technological Assessments

2.5.5.1 The subtask would start with the energy and industry sector technologies developed by the Energy and Industry Subgroup of WG III (EIS) to create a reasonably comprehensive review of technologies. Then identification would follow of high priority technology assessment areas among these technologies with as yet insufficient information. Information would be developed on the technical characteristics, including cost, performance (e.g., greenhouse gas emission characteristics, energy consumption, etc.), infrastructure requirements and applicability to different countries (and within countries, distinguishing between rural and urban areas) or regions. These technological characteristics and data would be described in terms of their time frame of relevance (in different regions):

- * present (to year 1995)
- * short term (to year 2005)
- * medium term (to year 2015)
- * longer term (to level feasible)

2.5.5.2 For the medium and longer term periods, integrated energy concepts (for example, combined heat and power) would also be analyzed with respect to the above-named characteristics, areas, etc.

2.5.5.3 Coverage aimed for would be global and would start by identifying:

- * the available indigenous energy sources;
- * regional physical conditions including climate variables;
- * existing technological status in the energy and industry sector and the associated energy infrastructures;
- * plans for development of energy and industry sectors and infrastructure to meet economic development and other goals;
- * availability of infrastructure and alternative technologies.

2.5.5.4 The subtask would further identify areas with significant potential for technology information transfer and technology transfer.

2.5.5.5 In the first 9 months the assessments would be based on available information. In the longer term, the subtask would identify and fill in areas where additional information and data would be needed.

2.5.6 Subtask 2: Thematic Assessments

2.5.6.1 Work on this subtask would begin by assessing the economic and market feasibility of energy and industry sector technologies via a number of thematic studies. The subjects of the studies would be those topics where policymakers would need

guidance to understand how and why technological potential identified in subtask 1 might differ from actual practice. This would include assessment of the effects on the energy and industry sector of a number of factors:

- * expected future supply and demand;
- * investment timing cycles, including replacement of existing inefficient, polluting or obsolete equipment;
- * consumer preferences, lifestyles and cultural differences;
- * income levels and distribution;
- * urbanisation and population distribution patterns;
- * technology capital and operating costs;
- * impacts of existing policy instruments, such as taxes, regulations and subsidies;
- * timing of availability of the technology and its initial cost level;
- * status of current infrastructure, including provision of energy services;
- * elasticity of supply and demand.

2.5.6.2 The following were cited as specific examples of studies which might help much in this connection:

- * sectoral studies (such as transport or electricity end-use) illustrating the factors mentioned above;
- * access to resources and capabilities for interfuel substitution (e.g., natural gas);
- * the underlying reasons for major differences in energy intensity within regional groupings, focusing on actual energy use in each grouping and the causes for the differences;
- * identification of the full economic, environmental and other types of costs and benefits (e.g., on trade or the development gap) of actions suggested for responding to climate change;
- * identification of specific safe and clean technologies with significant potential for transfer taking into account adaptability.

2.5.6.3 In the first nine months, effort would be concentrated on completing preliminary analyses of the first two items in para. 2.5.6.2 above and work would begin on the last three items which would require a longer time for completion.

2.5.7 Subtask 3: Country Studies

2.5.7.1 This subtask would concentrate on soliciting country studies, particularly from countries not yet producing such studies, to add to the substantial base of studies already done by the EIS group. In soliciting new country studies, the subtask would begin by developing a set of guidelines for comparable national studies of energy-sector greenhouse gas reduction costs and would encourage the submission of such studies by international agencies and non-government organizations. Special attention would be paid to some of the issues raised in subtask

2, e.g., energy and economic infrastructure patterns (networks of electricity distribution, oil and gas pipelines and public transport).

2.5.7.2 This subtask would further synthesize and analyze the information contained in the reports already received by EIS. Items for synthesis and comparative analysis would include:

- i) quantifying as far as possible the extent of actions being taken or planned whether or not for reasons of climate change;
- ii) the scope for achievement of low cost changes, such as some improvements in energy efficiency and fuel substitution, and low cost means for promoting them.

2.5.7.3 It was anticipated that special arrangements among countries and organizations would be made and coordinated under this subtask. A number of key country studies could therefore be completed and compared in the first 9 months. Completing studies for the full set of participating countries, however, would take a number of years.

2.5.8 Related workshop

In accordance with the Ministerial Declaration of the Second World Climate Conference (Geneva, 29 October - 7 November 1990), a workshop on environmentally-sound energy technologies and their transfer to developing countries and transition economies would take place in Milan, Italy in October 1991.

2.6 Task 4: Forestry-related issues (agenda item 2.4)

2.6.1 The Panel noted that human actions in the areas of forests and agriculture as the main types of land use contributed to net greenhouse gas (GHG) emissions on the one hand and were affected by climate change on the other. Both sectors were closely linked and of great importance for the whole ecosystem as well as for many human needs and activities. Therefore an integrated approach was necessary. Further, noting that land was a scarce resource, methodologies to assess and evaluate possible strategies and measures for its sustainable use needed to be developed.

Long term

In this context, the Panel agreed on three main subtasks for the WG III Subgroup on Agriculture, Forestry and Other Human Activities (AFOS) as a scientific and technical body in the long term:

- i) assessment and evaluation of management practices and systems affecting net GHG-emissions;
- ii) assessment and evaluation of adaptation measures including sensitivity studies;

- iii) evaluation of the socio-economic impacts of non-action as well as of possible efforts to mitigate and/or adapt to climate change; this subtask should be closely coordinated with related WG II activities in order to avoid unnecessary duplication.

Short term

In the short term, the Panel agreed that the following specific steps should be taken:

Workshops

- i) Workshops to explore options for global forest management in boreal, temperate and tropical zones (the first workshop on 24-30 April 1991 in Bangkok, Thailand).
- ii) Workshop on the minimization of net GHG-emissions from forests and agriculture (1991) to explore:
- * role of sustainable agriculture management practices and systems-assessment and evaluation on national and regional levels in different climate zones;
 - * role of integrated land use planning to minimize climate-related net GHG-emissions and to aim for sustainable development of the whole ecosystem (e.g., artificial water reservoirs to combat desertification and drought and to provide energy; forests for sustainable use as well to protect soil, bio-diversity, water cycles).

2.6.2 To further explore these key issues, an IPCC/AFOS meeting should be planned for late 1991 to evaluate the findings of the above-mentioned workshops and other conferences on forestry-related issues of relevance to IPCC, with main emphasis on socio-economic impacts, and to discuss further work including a seminar in the second half of 1992 in Finland on the role of forests in the global carbon cycle and storage.

2.7 Task 5: Vulnerability to sea level rise (agenda item 2.6)

2.7.1 The Panel recalled the conclusions of its First Assessment Report, in particular (i) the commitment to continuing sea level rise even after stabilizing the greenhouse forcing and (ii) the many national requests for assistance for assessing their vulnerability to sea level rise including the identification of appropriate adaptive measures and the development of comprehensive national plans.

2.7.2 The Panel further recalled that a primary recommendation made by the Coastal Management Subgroup (CZMS) of WG III in the IPCC First Assessment Report was for coastal countries to formulate, by the year 2000, coastal management plans that incorporate response measures to reduce vulnerability to sea level rise and address other immediate coastal resource management concerns. Since, the interest in continuing the work on responses to sea level rise had been strongly expressed by both developed and developing countries in informal discussions at various international meetings. These discussions had led the Panel to conclude that a new international effort, under the auspices of the IPCC and in co-operation with the UNEP Regional Seas Programme, should begin for an assessment of the vulnerability of developing and developed countries to sea level rise. The initial phase of the assessment, which would include, inter alia, methodology tested by a number of case-studies, should be completed as required by the INC process.

2.7.3 The assessment, for both developing and developed countries, should be undertaken jointly by IPCC Working Groups II and III through case studies. The assessment for developing countries should be done co-operatively with them, on bilateral bases, and in co-operation with the UNEP Regional Seas Programme. The Panel deemed it essential that experts from developing countries fully participate in the planning and in the implementation of the assessment.

2.7.4 A common methodology should be used, including for example:

- i) delineation of areas vulnerable to a one metre rise in sea level;
- ii) identification of resources and uses within vulnerable areas;
- iii) identification of appropriate adaptive options (retreat, adapt, protect);
- iv) consideration of national plans and programmes that implement adaptive measures to reduce vulnerability to sea level rise.

2.7.5 The following developing countries expressed a strong interest in participating in the assessment: Argentina, Bangladesh, Gambia, Kiribati, Nicaragua and Venezuela; Venezuela offered to host a regional workshop.

2.7.6 Three international workshops, one in the Caribbean, one in the South Pacific and one focused on heavily populated deltaic areas, would be convened after the completion of the case studies to:

- i) present the results of the case studies;

- ii) evaluate mechanisms for implementing the identified response strategies, such as integrated coastal management planning;
- iii) estimate the level/kind of assistance needed from international organizations and donor nations for further assessments and implementation of national management plans;
- iv) develop a report with recommendations for future work to be submitted to the INC and at the UNCED.

2.7.7 The Panel agreed that the initial assessment be directed by an interim advisory group chaired by the Netherlands and composed of the following members: Australia, Bangladesh, France, Gambia, Japan, Kiribati, Netherlands, Saudi Arabia, UK, USA and Venezuela; this would assure, inter alia, co-ordination between WG II and WG III.

2.7.8 The Panel requested the Director of the UNEP Regional Seas Programme to call an open-ended meeting of coastal experts in connection with the 16th session of the UNEP Governing Council (Nairobi, May 1991) to discuss the methodology, case studies, workshops and the preparation of an assessment report by April 1992. In addition, the Programme Director was requested to prepare a draft plan for work beyond 1992. The Panel encouraged other organizations with specific expertise such as the IOC to participate in the experts meeting.

2.7.9 The Panel recognized that coastal zone management was a long term task with short term aspects, such as the assessment on the vulnerability to sea level rise. The Panel requested the interim advisory group to complete the initial assessment within one and a half years.

2.8 Task 6: Emissions scenarios (agenda item 2.7)

2.8.1 Background

The Panel recalled that WG III had developed a set of emissions scenarios, that were subsequently used by the WG I for assessments of future climate change. These emissions scenarios were also used extensively by individual countries to support their national policy evaluations. The Panel agreed that recent developments warranted an update of the emissions scenarios.

2.8.2 Objectives

The main goal in this task was the accommodation of relevant developments, both in science and policy, in the emissions scenarios. The results would be used for updates of the work of Working Group I. They might also be used as bases for transient GCM-calculations. In the long run, they would provide further information against which progress in controlling global emissions over time could be evaluated.

2.8.3 Areas of main focus

The IPCC Business-as-Usual emissions scenario could, for example, be updated by including:

- * new scientific information and new UN population projections;
- * the London 1990 amendments to the Montreal Protocol;
- * forestry scenarios found consistent with AFOS results;
- * an acknowledgement of national energy reference and policy scenarios, including those submitted to EIS;
- * volatile organic compounds;
- * an evaluation of comprehensive approach, particularly methane;
- * regionalized data.

2.8.4 Methodology

2.8.4.1 The methodology would be similar to the one used during the development of the IPCC First Assessment Report. The Panel agreed that the task would be co-chaired by USA and the Netherlands and invited all interested countries to participate.

2.8.4.2 While the original scenarios (appearing in the IPCC First Assessment Report) were normative (specified in terms of doubling times of equivalent carbon dioxide concentrations as compared to its pre-industrial levels), the updated cases would reflect present views on the Business-as-Usual scenario and the different levels of emissions articulated in national policies.

2.8.5 Time schedule

2.8.5.1 The task would involve a continuous effort, and would last as long as deemed necessary by the Panel. Specific products would be developed based on the IPCC milestones. Broad evaluation of the international economic implications of the updated cases could be considered by an IPCC task force on methods to evaluate the socio-economic implications of climate change and response options.

2.8.5.2 Concerns were expressed on the presentation of "new scenarios", and about certain choices made in drawing up the emissions scenarios of the IPCC First Assessment Report. It was agreed that it was not a matter of new scenarios but a matter of a technical update and the results would first be presented to the Panel before being made public.

2.9 Selected studies of the economic implications of climate change (agenda item 2.5)

The Panel did not complete its discussion on this agenda item (see also paras 2.2.2 and 5).

2.10 Full participation of the developing countries (agenda item 2.8)

2.10.1 The Panel unanimously agreed that the task of increasing the attendance of experts from the developing countries in its activities, while showing improvements, still needed to be vigorously pursued and expanded. The Panel appealed for increased contributions to the IPCC Trust Fund for this purpose.

2.10.2 As another measure of furthering the substantive contributions from the developing countries to the studies and analyses undertaken by it, the Panel requested programmes such as the World Climate Research Programme and the International Geosphere-Biosphere Programme to help in this effort by involving as many experts from the developing countries as possible in their activities.

2.10.3 Proposals were made to establish a separate task force or a subcommittee under the direct supervision of the IPCC Bureau to address the issue of the full participation of the developing countries. The Panel did not complete its discussion on them.

2.11 Other and long-term tasks (agenda item 2.10)

The Panel addressed this agenda item in the course of its discussion and approval of the tasks under agenda items 2.1 to 2.9 (with agenda item 2.5 only partially discussed). As such, it did not separately devote time to this agenda item.

3. IPCC BUDGET AND OTHER SUPPORT (including for IPCC seminar series) (agenda item 3)

3.1 The Panel approved the budget request for 1991-1992; the budget is attached in Appendix C.

3.2 The Panel expressed its appreciation to those countries that had contributed to its activities in cash and kind. It also expressed its appreciation to the two sponsoring organizations, WMO and UNEP, for their support.

3.3 The Panel urged other potential donors to contribute generously to the IPCC Trust Fund (see also para 2.10.1).

3.4 A summary on the activities under the IPCC Information Exchange Seminar Series is attached in Appendix D.

3.5 The Panel expressed its appreciation to the Governments of Norway and the United Kingdom for their financial support to the seminar series. It expressed the view that such seminars could be undertaken by nations and other intergovernmental and non-governmental organizations as well. In this context, it noted with appreciation the recent seminars undertaken by the Governments of France, Japan and Spain.

4. **OTHER BUSINESS (agenda item 4)**

No matter was raised under this agenda item.

5. **ADOPTION OF THE REPORT OF THE SESSION (agenda item 5)**

The Panel adopted parts of the report dealing with agenda items 1 and 2 (with the exception of agenda item 2.5 on which the discussion could not be completed and agenda item 2.8). No disagreement arose during the discussion of agenda items 2.8 and 3. Draft texts for the report on these items were distributed but not formally presented for adoption. The report would be completed in the final version by the Chairman and sent to Members. Members would have an opportunity for comments on those parts not formally adopted at the next session of the Panel.

6. **CLOSURE OF THE SESSION (agenda item 6)**

This fifth session of IPCC came to a close at 18.00 hours on Friday, 15 March 1991.

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INTERGOVERNMENTAL PANEL
ON CLIMATE CHANGE

FIFTH SESSION

GENEVA, 13-15 MARCH 1991

AGENDA

1. OPENING OF THE SESSION
 - 1.1 Opening statement by Prof. Bolin, Chairman of IPCC
 - 1.2 Opening statement by Prof. G.O.P. Obasi, the Secretary-General of the World Meteorological Organization (WMO)
 - 1.3 Opening statement by Dr. M.K. Tolba, the Executive Director of the United Nations Environment Programme (UNEP).
 - 1.4 Approval of the agenda.
 - 1.5 Programme of work of the session
 - a) Working hours of the session
 - b) Tentative programme of work for the session.

2. IPCC WORK PROGRAMME FOR 1991 AND BEYOND
 - 2.1 How to assess national net greenhouse gases emissions?
 - 2.2 Predictions of the regional distributions of climate change and associated impact studies, including model validation studies.
 - 2.3 Energy-related issues.
 - 2.4 Forestry-related issues.
 - 2.5 Selected studies of the economic implications of climate change.
 - 2.6 Vulnerability to sea level rise.
 - 2.7 Emissions scenarios.
 - 2.8 Full participation of the developing countries.
 - 2.9 IPCC work procedures.
 - 2.10 Other and long-term tasks.

3. IPCC BUDGET AND OTHER SUPPORT

4. OTHER BUSINESS

5. ADOPTION OF THE REPORT OF THE SESSION

6. CLOSURE OF THE SESSION



APPENDIX C

IPCC BUDGET AND OTHER SUPPORT 1991-1992

(Approved 15 March 1991)

1. INTRODUCTION

1.1 This budget request is for the years 1991 and 1992 and is in Swiss Francs (SFr). It is submitted to the Panel for its consideration and approval, subject to the approval of the Executive Heads of WMO and UNEP. There has been effectively no budget since the fourth plenary session of IPCC (Sundsvall, Sweden, 27-31 August 1990). However, the Executive Heads have given their consent, in a temporary measure, for the continuation of the IPCC Secretariat activities until the approval of this request.

2. STATUS OF THE IPCC TRUST FUND AND OTHER SUPPORT

2.1 The status of the WMO/UNEP Joint Trust Fund is appended as Annex A to this document.

3. COMPONENTS OF THE BUDGET FOR 1991-1992

3.1 The budget is prepared in a modular form. Costs such as those associated with the sessions of the Panel and its Bureau and with the IPCC Secretariat are itemized in Annex B. Briefly summarized, they are:

	<u>SFr.</u>
[Cost per trip of air ticket and per diem (to calculate travel for experts from developing countries)]	5,000
Cost of the publication of the IPCC Overview and Policymaker Summaries	60,000
Cost of the Bureau session in Washington D.C. 15 February 1991	67,000
Cost of the fifth plenary session of the Panel Geneva, 13-15 March 1991 (4 languages, 40 experts from developing countries)	254,000
Cost of an IPCC session Geneva, 3 days (6 languages, 60 experts from developing countries)	375,000

Cost of an IPCC session Nairobi, 3 days (6 languages, 60 experts from developing countries)	472,000
Cost of a Bureau session Geneva, 2 days (4 languages, 6 participants from developing countries)	51,000
Participation of IPCC in the sessions of the Intergovernmental Negotiating Committee (Secretariat travel, reports, consultants)	90,000
IPCC Secretariat Staff	420,000
Overhead and other	300,000

4. REQUEST FOR 1991-1992

4.1 It is assumed that, in addition to the third session of the Bureau (Washington D.C., 15 February 1991) and the fifth session of the Panel (Geneva, 13-15 March 1991), there would be two sessions of the Panel (one in Geneva and another in Nairobi) and one session of the Bureau. It is further assumed that in addition to the travel support for the participants from the developing countries envisaged for these sessions, there would be 300 trips for such participants in 1991-1992.

4.2 Thus, the proposed expenditure for 1991-1992 is:

	<u>SFr .</u>
Cost of publication of Overview	60,000
Cost of Washington Bureau session	67,000
Cost of the IPCC fifth session	254,000
Cost of IPCC session in Geneva	375,000
Cost of IPCC session in Nairobi	472,000
Cost of Bureau session in Geneva	51,000
Cost of 300 additional trips for participants from developing countries	1,500,000
Participation in INC	90,000
IPCC Secretariat staff	420,000
Overhead and other	300,000

TOTAL	3,589,000

4.3 Of this, SFr. 2,340,000 (65.2%) is requested for the participation of the developing countries. As in the past, any savings from budget lines other than that for the travel support of experts from the developing countries would be used to provide travel support of more such experts to participate in IPCC activities.

5. DEFICIT FOR 1991-1992

5.1 From Annex A, it may be seen that the receipts for 1990 were SFr. 2,058,806; the expenditure incurred was SFr. 1,522,096 leaving a balance of SFr. 536,710 to be carried over into 1991. (The approved budget for 1990 through August of that year was SFr 1,589,500). As of 1 January 1991, WMO and the Government of Switzerland had contributed together SFr. 155,000. Since then, the Governments of Germany, Japan, Switzerland, the UK and the USA pledged DM 130,000, \$ 50,000, SFr. 30,000, £ 40,000 and \$ 200,000 respectively for 1991. The Governments of France and the Netherlands announced their intention to contribute.

5.2 Depending upon the exchange rates and including the UNEP cash contribution of SFr. 125,000 but excluding the intended contributions of France and the Netherlands, and assuming that one-half of the biennium budget applies to 1991, the projected deficit for 1991 would be in the neighbourhood of SFr. 500,000.

IPCC BUDGET AND OTHER SUPPORT - STATUS REPORT

1. Introduction

1.1 This is a report on the status of the WMO/UNEP Joint IPCC Trust Fund and the staffing of the IPCC Secretariat as of 15 January 1991.

2. Receipts in the joint WMO/UNEP IPCC Trust Fund for 1990

2.1 Receipts in the Trust Fund during 1990 were:

	<u>Amounts in SFr.</u>
Balance carried over from 1989	334,289.00
Australia	83,490.30
Canada	30,506.85
Denmark	153,000.00
Finland	15,742.56
France	97,145.09
Germany	70,494.17
Italy	83,500.00
Japan	*
Netherlands	151,384.45
Norway	33,985.00
Sweden	43,075.00**
Switzerland	30,000.00***
United Kingdom	111,224.00****
USA	298,970.00*****
UNEP	329,000.00
WMO	125,000.00
Rockefeller Fdn.	68,000.00
TOTAL	----- 2,058,806.42 -----

* Japan had given SFr. 75,500 (\$ 50,000) for 1990 which was actually received in the Trust Fund in late 1989. This amount is included in the carry-over from 1989 into 1990.

** In addition to the amount shown here, the Government of Sweden made lump sum grants to the participants from the developing countries in the fourth session of IPCC (Sundsvall, Sweden, 27-31 August 1990) to partially cover the high cost in Sundsvall. This has not been indicated here since this assistance was not paid via the Trust Fund.

*** In addition, Switzerland has given SFr. 30,000 from its 1990 appropriations, which was received in the Trust Fund in early January 1991. This amount is shown below in paragraph 6.1.

**** The Government of the UK has pledged £ 40,000 to the Trust Fund for 1991.

***** The Government of the USA has pledged \$ 200,000 to the Trust Fund for 1991.

2.2 Many governments have contributed in kind to the 1990 IPCC assessment effort, by hosting meetings and/or providing services including interpretation and local travel, assisting directly with the cost of the participation of experts from developing countries, translating the reports of the IPCC Working Groups into Chinese, French, Russian and Spanish, publication of IPCC Working Group reports and/or otherwise. These have not been separately identified as these were not direct contributions to the Trust Fund.

2.3 Through separate Memoranda of Understanding, the Governments of Norway and the United Kingdom have provided contributions of Nkr 700,000 and upto £ 100,000 respectively for a series of IPCC information exchange seminars in developing countries (see Appendix D). These are not shown in the receipts as these are not direct contributions to the IPCC Trust Fund.

3. IPCC Secretariat staff

3.1 The WMO bears the person-year cost of the Secretary of IPCC and the cost of housing the IPCC Secretariat in addition to its cash contribution. UNEP bears the person-year cost of the Senior Programme Officer in the IPCC Secretariat in addition to its cash contribution. The person-year cost contributions by the two sponsoring organizations amount to a little over SFr. 420,000 and are shown neither in the receipts nor in the expenditures (see para 5.1 below).

3.2 A Scientific Officer has been seconded by the Secretary-General of WMO to the IPCC Secretariat between 1 June 1990 and 18 January 1991. The person-year cost of this officer was provided by the Government of France. Part of this cost is included both in the receipts and in the expenditures.

3.3 A professional officer has been seconded by the Government of the United Kingdom to the IPCC Secretariat for a limited time to plan and implement the IPCC seminar series. This cost is not paid via the Trust Fund.

3.4 All other staff in the IPCC Secretariat are paid for through the Trust Fund.

4. Expenditure during 1990

4.1 The details of the 1990 expenditure is given in the attached sheet. Expenditure charged directly to the IPCC Trust Fund during 1990 amounted to SFr 1,522,096. This was spent as follows:

	<u>Amount in SFr.</u>
Support to developing countries (55.4%)	843,151.00
Secretariat Staff (19.0%, see section 4)	289,436.00
Translation (9.5%, see para 3.2)	144,727.00
Interpretation (0.9%, see para 3.2)	8,707.00
Secretariat Travel (2.8%)	41,942.00
Printing (2.6%)	39,616.00
Overhead costs (5.4%)	82,149.00
Equipment (2.1%)	32,595.00
Other miscellaneous (2.5%)	37,396.00
Hospitality (0.2%)	2,377.00

5. Trust Fund balance as of 15 January 1991

5.1 With an expenditure of SFr. 1,522,096 during 1990, the carry over into 1991 was SFr. 536,710. The financial situation of the IPCC Trust Fund as of 15 January 1991 is:

	<u>Amounts in SFr.</u>
Balance carried over from 1990	536,710
Switzerland contribution	30,000
WMO contribution	125,000

Total	691,710

IPCC BUDGET COMPONENTS

(All amounts shown are in Swiss Francs)

Note: The average cost of a trip (ticket and per diem) is taken at SFr. 5000.

1. FIFTH PLENARY SESSION OF IPCC

- (a) 4 languages (E,F,R,S)
- (b) 40 participants from developing countries
- (c) 3 working days

	<u>SFr.</u>
Interpretation	17,000
Translation	15,000
Printing of report	5,000
Secretariat travel	-
Support to developing countries (40 countries)	200,000
Hospitality	3,500
Temporary Staff	3,500
Miscellaneous	10,000

Total	254,000

2. SESSION OF IPCC IN GENEVA

- (a) 6 languages (A,C,E,F,R,S)
- (b) 60 participants from developing countries
- (c) 3 working days

	<u>SFr.</u>
Interpretation	38,000
Translation	15,000
Printing of report	5,000
Secretariat travel	-
Support to developing countries (60 countries)	300,000
Hospitality	3,500
Temporary Staff	3,500
Miscellaneous	10,000

Total	375,000

3. SESSION OF THE PANEL IN NAIROBI

- (a) 6 languages (A,C,E,F,R,S)
- (b) 60 participants from developing countries
- (c) 3 working days

	<u>SFr.</u>
Interpretation	120,000
Translation	15,000
Printing of report	5,000
Secretariat travel (3 staff)	15,000
Support to developing countries (60 countries)	300,000
Hospitality	3,500
Temporary Staff	3,500
Miscellaneous	10,000

Total	472,000

4. SESSION OF THE BUREAU IN GENEVA

- (a) 4 languages (C,E,F,R)
- (b) 6 participants from developing countries
- (c) 2 working days

	<u>SFr.</u>
Interpretation	17,000
Translation	2,000
Printing of report	1,000
Secretariat travel	-
Support to developing countries (6 countries)	30,000
Hospitality	-
Temporary Staff	1,000
Miscellaneous	-

Total	51,000

5. PARTICIPATION OF IPCC IN THE INC (24 months)

Preparation and distribution of reports	30,000
Secretariat travel	36,000
Hire of short-term consultants (3 person-months)	24,000

Total	90,000

6. PERSONNEL (for 24 months)

IPCC Secretary*	-
Senior Programme Officer**	-
Administrative Assistant	180,000
Typist/Clerk	140,000
Hire of temporary staff	100,000

Total	420,000

7. OVERHEAD COSTS AND OFFICE EQUIPMENT (24 months)

Telefax, telex, postage etc. including office equipment	300,000

Total	300,000

* Borne by WMO

** Borne by UNEP



IPCC INFORMATION EXCHANGE SEMINAR SERIES

(Status of activities as of 1 March 1991)

1. It may be recalled that the Special Committee on the Participation of Developing Countries had recommended steps to encourage the full participation of developing countries in the work of IPCC. (The Special Committee has defined full participation as "including the development of national competence to address all issues of concern such as the appreciation of the scientific basis of climate change, the potential impacts on society of such change and evaluations of practical response strategies for national /regional applications"). One step was the dissemination of information on climate change issues by means of information exchange seminars.
2. The Norwegian Government has provided, through a Memorandum of Understanding (MOU), Nkr 700,000 for such seminars. The UK Government, through another MOU, has offered up to £100,000 for the same purpose and seconded an official, Mr. Jonathan Tillson, to the IPCC Secretariat for a limited period to help get the project planned and implemented.
3. Teams of 2 or 3 speakers who are familiar with IPCC First Assessment Report are supported to present a 1-3 day seminar in each interested developing country. Speakers use visual and other aids; copies could be left behind for use in follow-up activities. Small lump sum grants are also given to the host country if necessary.
4. The IPCC Secretariat works closely with local organizers to encourage the participation of as many ministers (e.g., environment, energy, foreign affairs, agriculture, transportation, development and planning and those responsible for the meteorological/hydrological services) and their senior advisors as possible. Sessions may also be held for other interested audiences, such as the members of the academia, the press and the industrial and environmental organizations.
5. Seminars have been held in two countries, and more are being planned for March through to at least July 1991. The calendar for the seminars is given below. The average cost of each seminar is in the range of SFr. 15,000-20,000.

IPCC SEMINARS: CALENDAR

Seminars held so far:

17 December 1990	Mauritius
16-18 January 1991	Venezuela

In Mauritius, the seminar was attended by the Minister of the Environment and senior officials from other ministries.

In Venezuela, there were 5 sessions: one each for the President and the Council of Ministers, the Ministry of Energy, the Ministry of Environment, prominent civic leaders, and Petroleos de Venezuela.

Seminars in planning:

18-19 March 1991	Argentina (finalized)
April 1991	Nicaragua (with the other 6 members of the Central American Commission for Environment and Development)
April	Ethiopia
April	Zimbabwe
June	Algeria
July	South Pacific Regional Environment Programme

Other possibilities:

Botswana
Burkina Faso
Central African Republic
Congo
Ghana
Kenya
Zambia

LIST OF CLIMATE CHANGE RELATED AND OTHER ENVIRONMENTAL MEETINGS1991

February 4-14	Washington D.C.	Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC) - first session
February 15	Washington D.C.	IPCC Bureau - third session
March 12	Geneva	Public Information and Promotion Task Force of the International Conference on Water and Environment
March 13-15	Geneva	IPCC - fifth plenary session
March 13-15	Geneva	Ozone Research Managers' Meeting (Montreal Protocol)
March 18-19	Geneva	Bureau of the Vienna Convention
March 18 to April 5	Geneva	Preparatory Committee of UNCED - second session
May 1-25	Geneva	Eleventh WMO Congress
May 7-10	Bangkok	Regional Commission on Food Security for Asia and the Pacific - 5th session (FAO)
May 13-15	Nairobi	African Ministerial Conference on the Environment - 4th session (UNEP)
May 20-31	Nairobi	UNEP Governing Council - 16th session
May 22-23	Paris	DAC Working Party on Development Assistance and Environment (OECD)
May 27-29	Geneva	WMO Executive Council - 43rd session
June 3-7	Oslo	FAO Reg. Forestry Commission for Europe (FAO)
June 3-28	New York	UNDP Governing Council - 38th session
June 8 (or 18 ?)	Nairobi	Bureau of the Montreal Protocol - 3rd meeting (UNEP)
June 10-21	Rome	FAO Council - 99th session

June 14	Nairobi	Bureau of the Vienna Convention - 2nd meeting (UNEP)
June 16-19	Oslo	Center for International Climate and Energy Research, University of Oslo. Workshop on research findings on effective abatement strategies
June 17-18	Nairobi	Conference of the Parties to the Vienna Ozone Convention - 2nd meeting (UNEP)
June 19-21 (or 20-22 ?)	Nairobi	Parties to the Montreal Protocol - 3rd meeting (UNEP)
June 19-28	Geneva	INC - second session
June 24 to July 3	Madrid	Ad hoc Working Group of Legal and Technical Experts on Biological Diversity
July 3-26	Geneva	Economic and Social Council (ECOSOC)
July 8-11	UK	Task force of IPCC Working Group I
Summer 1991	Geneva	United Nations Conference on Trade and Development - 8th session (UNCTAD)
August 5-8 (a.m. only on 8)	Geneva	IPCC Working Group III
August 5-7	Geneva	Energy and Industry Subgroup of IPCC Working Group III
August 8-10 (p.m. only on 8 & a.m. only on 10)	Geneva	IPCC Bureau - fourth session
August 18 to September 6	Geneva	Preparatory Committee of UNCED - third session
September 17-26	Paris	Tenth World Forestry Congress (FAO)
September 20-25	Madrid	15th Congress of the World Energy Council (WEC)
September 24-25	Rome	Steering Committee of the International Conference on Water and Environment
September 9-20	Nairobi	INC - third session
October 7	Paris	Ad Hoc Group on Environment and Development Assistance and Environment (OECD)

October 8-9	Paris	Working Party on Development Assistance and Environment (OECD)
October 29-31 (?)	Nairobi or Geneva	IPCC - sixth plenary session
November 19-22	TBD	Executive Body for the Convention on Long-range Transboundary Air Pollution (ECE)
December 9-13	Rome or Abidjan	FAO Committee on Forest Development in the Tropics (FAO)
December 9-20	Geneva	INC - fourth session
<u>1992</u>		
January 26-31	Dublin	International Conference on Water and Environment
February TBD	TBD	IPCC - seventh session
February TBD	TBD	INC - fifth session
March 9-14	Margarita Island, Venezuela	International Workshop on the Rising Challenge of the Sea (Coastal Zone Management Subgroup of IPCC Working Group III, Govts. of Venezuela, USA and The Netherlands)
March 9 to April 3	New York	Preparatory Committee of UNCED - fourth session
April 6-10	Nairobi	UNEP Governing Council - third special session
June 1-12	Rio de Janeiro	United Nations Conference on Environment and Development (UNCED)
June 22 to July 4	Geneva	WMO Executive Council - 44th session

LIST OF ACRONYMS

AFOS	Subgroup on Agriculture, Forestry and Other Human Activities of IPCC Working Group III on Response Strategies
CZMS	Coastal Zone Management Subgroup of IPCC Working Group III on Response Strategies
EC	European Community
EIS	Energy and Industry Subgroup of IPCC Working Group III on Response Strategies
FAO	Food and Agriculture Organization of the United Nations
GCM	General Circulation Model
GHG	Greenhouse Gas
IAEA	International Atomic Energy Agency
ICSU	International Council of Scientific Unions
IEA	International Energy Agency
IGBP	International Geosphere-Biosphere Programme (ICSU)
IIASA	International Institute for Applied Systems Analysis
INC	Intergovernmental Negotiating Committee (UN)
IOC	Intergovernmental Oceanographic Commission (UNESCO)
IPCC	Intergovernmental Panel on Climate Change (WMO/UNEP)
IPIECA	International Petroleum Industries Environmental Conservation Association
OECD	Organization for Economic Cooperation and Development
OECD DAC	OECD Development Assistance Committee
OPEC	Organization of Petroleum Exporting Countries
SEI	Stockholm Environment Institute
RIIA	Royal Institute of International Affairs

TERI	Tata Energy Research Institute (India)
UN	United Nations
UNCED	United Nations Conference on Environment and Development (Rio de Janeiro, June 1992)
UNDP	United Nations Development Programme
UN-ECE	UN Economic Commission for Europe
UN-ESCAP	UN Economic and Social Commission for Asia and the Pacific
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNGA	United Nations General Assembly
WEC	World Energy Council
WCIP	World Climate Impacts Studies Programme (one of the four components of WCP; UNEP responsible)
WCP	World Climate Programme (WMO lead responsibility)
WCRP	World Climate Research Programme (one of the four components of WCP; WMO and ICSU jointly responsible)
WG	Working Group
WMO	World Meteorological Organization