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INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

REPORT OF THE EIGHTH SESSION
OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

Harare, Zimbabwe, 11-13 November 1992

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(Section 6 was approved by the Panel at the session; the other sections and Appendix E are drafts for the Panel's approval)

OPENING CEREMONIES

The Minister for Transport and Energy of Zimbabwe, the Hon'ble Mr. D. Norman, representing the President of the Republic, His Excellency Robert Mugabe, was the guest-of-honour.

The Director of the Meteorological Services, Zimbabwe, Dr. M.C. Zinyowera, requested the Minister for Environment and Tourism of Zimbabwe, the Hon'ble Mr. H. Murerwa, to preside over the opening ceremonies.

In his welcome address, Mr. Murerwa commended the World Meteorological Organization and the United Nations Environment Programme for their initiative in establishing the IPCC. He also commended the IPCC for spearheading the debate on the greenhouse effect and for its effort in raising public awareness of the issue. He called on the world community to take measures as a precaution to mitigate the possible adverse effects of climate change. He said that as a full participant in the negotiation process leading to the United Nations Framework Convention on Climate Change (FCCC), and as a signatory of the Convention, Zimbabwe was fully committed to its objectives.

Reflecting on the drought which was devastating the nations in the southern part of the African Continent, Mr. Murerwa asked whether these were signals of a changing climate. He expressed the hope that the negotiation process for a Convention on Desertification would start soon and called on the international community to support such a Convention.

In conclusion, Mr. Murerwa informed the session that Zimbabwe had just concluded its National Response Conference to UNCED and hoped that the deliberations of the session would benefit Zimbabwe in the implementation of Agenda 21.

Six-year old Shaida Agdasi sang for the guests.

In his remarks, Professor Obasi expressed appreciation to the Government and people of Zimbabwe for inviting IPCC to hold its eighth session in Harare. He applauded President Mugabe's support and interest in environmental issues.

Professor Obasi also applauded the decision of IPCC to hold its eighth session in a developing country; this was a manifestation of the Panel's desire to encourage the developing countries to more fully participate in its activities. He commended the Panel in its efforts to foster co-operation among the world scientific and intellectual community in addressing the globally significant problem of climate change. He hoped that

IPCC might be able to assist in the transfer of scientific knowledge and expertise from the developed to the developing nations.

He drew the attention of the delegates to the Intergovernmental Meeting on the World Climate Programme planned for 14-16 April 1993 in Geneva. The Meeting would seek a strengthening of the support by governments for the World Climate Programme. He urged increased interaction between IPCC and the relevant WMO programmes, the UN system and national, regional and other international bodies.

Professor Obasi commended the IPCC for completing its 1992 Supplement in time for consideration during the negotiation process for the FCCC. He hailed the decision by the Panel to review its structure in order to respond more effectively to the ever-increasing need for information on climate change. Flexibility in the new structure would be necessary so that IPCC could address new tasks that might arise out of the implementation of the FCCC and Agenda 21. He assured the Panel that WMO remained committed to supporting the Panel in achieving its objectives.

On behalf of the Executive Director of UNEP, Dr. M.K. Tolba, the UNEP Assistant Executive Director, Dr. M.D. Gwynne expressed gratitude to the Government and people of Zimbabwe for hosting the session which demonstrated the leading role of Zimbabwe in IPCC activities.

UNEP accorded high priority to the issue of climate change and climate variability and it was for this reason that UNEP had joined the WMO in establishing IPCC. Dr. Gwynne however added that the partnership between the two organizations on environmental and climate issues had begun long before the establishment of the IPCC, with and implementation of the World Climate Programme (WCP). Dr. Gwynne informed the session of the arrangements made by the Scientific Advisory Committee - the body which oversees the development and implementation of the WCIRP (the World Climate Impacts and Response Strategies Programme, the component of WCP under the responsibility of UNEP) - to ensure closer liaison between IPCC and the WCIRP. At its last session (Boulder, CO, USA, October 1992), the Committee had recommended that UNEP's role in country studies be expanded, in support of the various efforts by IPCC in this field.

Citing the periodic reports provided by the Chairman of IPCC to the sessions of the INC and the 1992 IPCC Assessment, Dr. Gwynne commended the effective role played by IPCC in the process that led to FCCC and the UNCED decisions. He observed that much remained to be done, adding that the foundation already laid and the experience gained over the past four years placed IPCC in a good position to meet future challenges. Dr. Gwynne thanked those governments and international organizations which made financial contributions to support the activities of the Panel. He assured the session of UNEP's continued support to IPCC.

Speaking on behalf of the delegates, Prof. Bolin said that he was very pleased to see young people invited to the opening ceremony. The time scale climate change spans is generational. It is not yet possible to show statistically that a change in climate is occurring even in the face of recent extreme weather events such as droughts and hurricanes. The consequences have economic and social implications: rain or no rain and rising sea, for example, have implications for plenty or poverty. The IPCC would continue to improve the understanding of the issue so that generations now and yet to come can make informed decisions to meet the challenge of climate change.

A play was presented by the students of North Park School, Harare.

In his address to the session read on his behalf by Mr. D. Norman, Minister for Transport and Energy, His Excellency Comrade Mugabe, President of the Republic of Zimbabwe, welcomed the delegates and thanked WMO and UNEP for convening the eighth session of IPCC outside the established centres of the United Nations.

The President reminded the delegates that the 1991/92 drought in southern Africa was the worst in living memory, having led to total crop failure, water shortage, human suffering and loss of livestock. Economic performance dropped by 10% and 50% of the population was on drought relief. Funds amounting to US$ 200 million had been diverted to securing food supplies. His government was determined to do everything possible to overcome the current difficulties.

In spite of limited financial and human resources, Zimbabwe continued to be active in the environmental debate at national, regional and global levels. In many developing countries, environmental issues tended to be accorded low priority because of economic hardships, and it was difficult to strike a balance between environmental protection and economic development. The President added that developing countries would require assistance to meet the incremental costs of responding to global environmental issues. He welcomed the creation of the Global Environmental Facility and called for transparency in its management.

The President congratulated IPCC on its completion of the 1990 First Assessment Report, the 1992 IPCC Supplement and on the work underway to produce the Second Assessment Report scheduled for 1995. He urged that particular attention be paid to the socio-economic impacts of climate change, and costs of adaptation and mitigation in the planned assessment.

The President appealed to the international community to increase their support to projects designed to assist developing countries in agricultural production and drought preparedness. He gave as examples, the Drought Monitoring Centres in Nairobi and Harare, and Early Warning Units for Food Security. He urged the scientific community to assist in the free

exchange of scientific knowledge and environmentally sound technologies for the benefit of all mankind.

Focusing on the future, President Mugabe called for more attention to be given to those measures which would eliminate the causes of climate change urging that a collective global approach be adopted.

In the name of President Mugabe, Mr. Norman declared the eighth session of the IPCC open.

Mr. Murerwa declared the opening ceremonies closed and invited Prof. Bolin to take the chair.

1. OPENING OF THE SESSION (agenda item 1)

1.1 The Chairman of the IPCC, Prof. B. Bolin, opened the session at 1155 hours with the Hon'ble Ministers of Zimbabwe for Transport and Energy and for Environment and Tourism present. The agenda, as approved, is attached in Appendix A.

1.2 The chairman invited Mr. L. Breslin of the INC secretariat and Dr. V. Boldirev, the Director of the World Climate Programme (WMO), to inform the Panel respectively on the plans of the INC and the Intergovernmental Meeting on the World Climate Programme planned to take place from 14 to 16 April 1993 in Geneva.

1.3 Mr. Breslin informed the session that the Framework Convention on Climate Change had been signed by 157 States and one regional economic integration organization. Four States (Mauritius, Seychelles, Marshall Islands and USA) had also ratified the Convention, which would come into force ninety days after the deposit of the fiftieth instrument of ratification, acceptance, approval or accession. The first session of the Conference of the Parties would be convened within one year of the coming into force of the Convention and this was expected in the second half of 1994.

1.4 Article 21 of the Convention requested the head of the interim secretariat for the Convention to co-operate closely with the IPCC to ensure that the Panel could respond to the need for objective scientific and technical advice. The sixth session of the Intergovernmental Negotiating Committee on the Framework Convention on Climate Change (INC) would take place in Geneva from 7 to 10 December 1992 with the main purpose of preparing for the first session of the Conference of the Parties.

1.5 IPCC had a key role to play, particularly as regards Article 4 which dealt with the preparation of national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and measures to mitigate climate change. The Panel would also have an important role in the development of other comparable methodologies for country studies.

1.6 Dr. Boldirev recalled that the decision to hold the Intergovernmental Meeting on WCP was made by the Eleventh World Meteorological Congress in May 1991 and had been supported by the UNEP Governing Council. The co-sponsors of the meeting were WMO, UNEP, UNESCO and its IOC, FAO, UNDP and ICSU.

1.7 In response to the recommendations of Agenda 21 adopted by the UNCED, the objectives of the meeting were:

- to review means of strengthening national climate programmes;
- to assess how national programmes can make greater contributions internationally;
- to assess the changed demands on the WCP and associated activities, the resource needs and to consider means of meeting new requirements.

1.8 New thrusts would be proposed to respond to specific needs identified in Agenda 21 and in the Framework Convention on Climate Change:

- Climate Services for Sustainable Development,
- New Frontiers in Climate Prediction and Science,
- Dedicated Observations of the Climate System,
- Assessments of Climate Impacts and Response Strategies,

placing particular emphasis on strengthening national and regional capacities.

1.9 Information was provided on recent actions to prepare the Intergovernmental Meeting, including the establishment of an Organizing Committee. Funds were still short to ensure the fullest possible participation by developing countries.

2. CONTINUING WORK PROGRAMME OF IPCC (agenda item 2)

2.1 It was understood that the details of the work plan on the subject areas and the time tables covered in the presentations under this agenda item would be undergoing periodic review by the Panel and modification as necessary. It was further understood that comments on the work plans could be forwarded in writing to the respective Co-Chairmen.

2.2 In particular, comments and suggestions on the work plan of Working Group II should be sent no later than 5 January 1993 to Mr. Robert A. Reinstein, the Chairman of Working Group II, to enable the matter to be discussed in detail at a session of the Working Group planned in Geneva from 8 to 12 February 1993. Mr. Reinstein can be reached through the Office of Global Change OES/EGC, Room 4329 A, Department of State, Washington D.C. 20520, fax: + 202 647 0191.

2.3 With respect to the development of the work plan of Working Group III, the Panel agreed with the Chairman's proposal that a workshop of experts, with a broad representation from developed as well as the developing countries and countries with economies in transition, be planned in March-April 1993 with the aim of developing the base material to help the Working Group formulate its work plan.

2.4 All three Working Groups were encouraged to collaborate with relevant international and other organizations as they deemed fit.

2a. Presentation by Sir John Houghton

2.5 Sir John Houghton presented the draft workplan. The Chairman of the IPCC stated that there might be a need for a plenary session of the Working Group and an IPCC session in the first half of 1994 to forward a status report to the first session of the Conference of the Parties to the FCCC; the status report could contain the work on emissions inventories and associated topics.

2.6 In the discussion, the following major points were made:

* the planned scientific work for meeting the objective (Article 2) of the UN Framework Convention on Climate Change (FCCC) was of a preliminary nature and this should be so indicated;
* both natural and anthropogenic aerosols are of concern;
* sinks such as oceans would be taken into account to the extent feasible;
* an assessment of the current capability to predict regional climate change (RCC) be emphasized and that to this end there be a workshop on the modelling of RCC.

2.7 The Panel agreed with the amended workplan including the schedule (see Appendix B) submitted by Sir John.

2b. Presentation by Mr. Robert A. Reinstein and by Prof. Yu. A. Izrael

2.8 Mr. Reinstein introduced the general outline for the proposed workplan for the new Working Group II, with an addendum for the work of its four Subgroups. He indicated that the topics had not been prioritized. He expressed the view that the study of impacts and policy options is most fruitfully done in the broader perspective of sustainable development. The draft workplan is attached in Appendix C.

2.9 The major points made during the discussion were:

* the outputs of the Working Group need to be of practical use and hence should be organized by tasks;

* while the proposed workshops are an important part of the assessment process for bringing together information for evaluation, they do not constitute an assessment in themselves;

* the existing networks of experts developed through the former Working Groups II and III should not be lost; these took considerable time and effort to build and hence they should not only be maintained, but integrated into the future work;

* further development of the workplan for the Working Group would require close coordination both within the Working Group and with Working Groups I and III.

2.10 As stated earlier (see paragraph 2.2), the details of the workplan would be refined at the forthcoming session of the Working Group.

2c. Presentation on cross-cutting issues by Prof. Bolin

2.11 The Chairman's remarks on the future tasks of the IPCC in general and on cross-cutting issues in particular are attached in Appendix D.

2.12 The discussion was spread over more than one agenda item. The Panel decided to establish a new Working Group III on cross-cutting economic and other issues (see para 6.10 below). It agreed with the Chairman's proposal to conduct an exploratory workshop to help the Working Group draft its workplan (see para 2.3 above).

3. RESOURCE-BUILDING IN THE DEVELOPING COUNTRIES (agenda item 3)

3.1 At the invitation of the Chairman, Dr. T. Rosswall, the representative of the International Geosphere Biosphere Programme (IGBP) of the International Council of Scientific Unions (ICSU) informed the Panel of the status of the IGBP START (System for Analysis, Research and Training) programme to enhance the research capabilities in geo-sciences in the developing countries.

3.2 The following points were made during the presentation:

* the IGBP was launched by ICSU in 1986 to address the interactive chemical and biological processes regulating the Earth system; START is being developed by the IGBP in association with the World Climate Research Program (WCRP) and the programme on Human Dimensions of Global Environmental Change (HDGEC) - the WCRP is a joint WMO/ICSU/IOC programme which was established by WMO and ICSU in 1980; the HDGEC, established more recently, deals with socio-economic research to understand the role of human actions on the global environment;

* START is a response to the growing need for building the scientific capabilities and infrastructure required to enable the scientists from developing countries to participate effectively in all aspects of planning, coordinating and implementing global change research and training;

* START aims to establish a global network of research centres in 14 regions chosen for their distinctive bio-geographic and socio-economic characteristics; priority is given to establishing networks in developing countries, with an initial emphasis in the Equatorial South America, Northern Africa, and the Tropical Asian Monsoon regions;

* the START programme is being closely coordinated with other similar regional initiatives, such as the Inter-American Institute for Global Change Research, and relevant national efforts.

3.3 The IPCC welcomed the presentation and urged that every effort be made to ensure that the quality of the regional research networks in developing countries is equal to that in developed countries, particularly with respect to communications.

4. COUNTRY STUDIES (agenda item 4)

4.1 The Report of the Country Study Workshop (Berkeley, 14-16 September 1992) was available to the delegates at the session in English, French and Spanish. At the invitation of the Chairman, Mr. R.A. Reinstein briefly introduced the Report.

4.2 The following points were made during the presentation and the ensuing discussion:

* the purpose of the workshop was (i) to inform the participating countries of the methodologies developed or being developed by the IPCC that they could use in their country studies, (ii) to bring the views of donor organizations - both multilateral and bilateral - to the attention of the participants and (iii) to identify common problem areas and ways and means of addressing them;

* UNEP was compiling a catalogue of country studies, a second draft of which was available; all corrections to the draft could be forwarded to the UNEP secretariat;

* UNEP had also received funding from the Global Environment Facility (GEF) for eleven country studies on net greenhouse gas emissions; further, UNEP had completed case studies on some aspects of the impacts of climate change in Brazil and Southeast Asia (Indonesia, Malaysia, Thailand and Vietnam).

4.3 The need for a clearing house mechanism for information on potential donors and recipients of scientific-technical advice and financial assistance was pointed out. The representative of UNEP informed the Panel that UNEP was providing such a coordination service within the framework of the World Climate Programme and expressed the further interest of UNEP in expanding this role. The Panel welcomed these efforts of UNEP. It urged that the Working Groups appropriately inform the donor/ implementing agencies of the IPCC work on methodologies.

5. REVIEW PROCEDURES FOR PUBLICATION OF THE IPCC REPORTS AND OF THE UNDERLYING SUPPORTING MATERIAL (agenda item 5)

5.1 The question of IPCC sponsorship of meetings/workshops/ conferences was included under this agenda item.

5.2 The following points were made during the discussion:

Contributors and reviewers

* the process of selecting contributors should be open; contributors should be selected from a wide pool of experts with proven experience from all countries;

* developing countries and countries with economies in transition may have good potential contributors whose names frequently do not show up in the published literature; IPCC reference to governments is one way to identify them;

* lists of scientists/experts from all countries who might be available to contribute should be available to all IPCC members;

* practical considerations necessitate that first drafts be written by small groups of lead authors for subsequent wider contribution;

* the peer review requirements for policymaker summaries need to be carefully specified;

* clear guidelines should be set allowing time for review in workplans; the process of peer-review should form part of the plans from the start;

* international organizations are valuable independent sources of reviews;

* suitable expression of the differences of opinion among contributors and reviewers is necessary; some reviewers in the past had felt that their comments had not been considered adequately and hence objected to being listed as this implied concurrence;

* consideration should be given to translation in all UN languages of drafts for further contribution and review;

* common procedures should apply to all 3 Working Groups;

Publications

* future IPCC budgets should include estimates of publication costs;

* recycled paper should be specified as part of the format;

* the level of IPCC permissions for publications needed to be decided (for example, can workshop/Working Group reports be published without specific IPCC permission?);

* reports approved by the IPCC and published as IPCC reports or policymaker summaries should be clearly distinguished from other material generated for IPCC use;

* the list of IPCC publications should be periodically updated, with clear identification between IPCC-approved reports and others; translations of reports should also be included in the list; the list should be widely disseminated.

5.3 The document on the draft review procedures which was considered by the Panel during these discussions would be revised jointly by Dr. A. Apling (UK) and Dr. R.T. Watson (USA) after consultations with interested participants. The revised document would be submitted to the ninth session of the IPCC for approval.

Sponsorship of meetings

5.4 The IPCC recognized that requests were beginning to be received for IPCC sponsorship of various technical/scientific meetings and conferences. It agreed that sponsorships may be extended by the Chairman of the IPCC, in consultation with the appropriate Co-Chairmen, if the output of the meeting/conference can directly contribute to the IPCC assessment activity. Decisions on major conferences, however, should be referred to the IPCC Bureau.

5.5 The Panel expressed the view that sponsorships should not be automatically deemed to include financial contributions.

5.6 It requested that it be informed of the sponsorships at the earliest opportunity.

6. REPORT OF THE TASK FORCE ON IPCC STRUCTURE (agenda item 6)

6.1 The Panel completed the unfinished portion of the work of the Task Force. The introductory part of the report of the Task Force which served to guide the Task Force in its discussions is attached in Appendix E.

6.2 With regard to its future structure, the Panel decided as follows.

6.3 Support by the IPCC for the Framework Convention on Climate Change

Bearing in mind the legal regime established by the United Nations Framework Convention on Climate Change, the scientific and technical support of the IPCC for the Parties to the Convention and the bodies established by the Convention will be guided by:

a. the decisions of the Governing Bodies of the World Meteorological Organization and the United Nations Environment Programme, including Resolution 1 of the forty-fourth session of the WMO Executive Council;

b. Article 21, Interim Arrangements, of the Convention;

c. Article 7, Conference of the Parties, of the Convention; and

d. Article 2, Objective, of the Convention, and the need to identify and shed light on scientific questions and research requirements related to this Article.

6.4 Chairman and Vice-Chairmen of the IPCC

The work of the IPCC should be led by a Chairman, who should be assisted by two Vice-Chairmen, at least one of whom should be from a developing country.

6.5 Duties of the Chairman of IPCC

The Chairman of the IPCC shall:

(a) propose the agenda for, convene and preside over the sessions of the IPCC and of its Bureau;
(b) in consultation with the IPCC Bureau, take decisions concerning the conduct of the IPCC sessions;
(c) report on IPCC activities, as appropriate, to the Governing Bodies of WMO and UNEP, to the sessions of the Intergovernmental Negotiating Committee on the FCCC and to the Conference of the Parties to the FCCC;

(d) carry out such functions as are assigned or may be assigned by the Principles Governing IPCC Work and by the IPCC.

6.6 Duties of the Vice-Chairmen of IPCC

Each Vice-Chairman shall perform such duties as are agreed to between the Chairman and the Vice-Chairmen.

6.7 IPCC Working Groups

The IPCC should have 3 Working Groups.

6.8 Working Group I

6.8.1 Working Group I should assess available information on the science of climate change, in particular that arising from human activities.

(a) It should consider, inter alia:

* developments in the scientific understanding of past and present climate, of climate variability, of climate predictability and of climate change;
* factors affecting climate change including feedbacks from climate impacts;
* progress in the modelling and prediction of global and regional change of climate and sea level change;
* observations of climate, including past climates, and assessment of trends and anomalies;
* gaps and uncertainties in current knowledge;

(b) It should develop a methodology for the preparation of national inventories of anthropogenic emissions by sources and removals by sinks of greenhouse gases[1] (in cooperation with the IPCC Members, the OECD and other organizations as appropriate). It should also develop guidelines for comparable methodologies for these inventories, taking into account the requirements of the UN Framework Convention on Climate Change.

(c) It should, on the basis of (b) above and by other means, establish best possible estimates of past and present regional and global net emissions of greenhouse gases.

6.8.2 A peer review process should be incorporated in the preparation of the reports of the Working Group.

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[1] The term "greenhouse gases" used in this section is as defined in Article 1 of the United Nations Framework Convention on Climate Change.

6.9 Working Group II

6.9.1 Working Group II should assess available scientific, technical, environmental, social and economic information regarding impacts of climate change and regarding response options to adapt to and/or mitigate climate change.

(a) It should consider, inter alia, the impacts of climate change on:

* vulnerable areas;
* resources and ecosystems;
* human activities.

Consideration should include assessment in each of these areas of the sensitivity at the regional and national level to the nature, rate and magnitude of potential climate change.

(b) It should consider, inter alia, assessments of future trends of net emissions of greenhouse gases, impacts of changing technology, adaptation to climate change, response options to adapt to climate change and response options to mitigate climate change by addressing future trends in the net emissions of all greenhouse gases and other factors of climate change, with particular attention given to the special needs of the developing countries.

(c) It should develop common methodologies, where needed, for application by those desiring to use them; such work should include the development of guidelines for making national assessments of the impacts of climate change, methodology to assess vulnerability to climate change and methodology to assess technology options.

6.9.2 The Panel agreed that the Working Group should carry out its terms of reference by forming four Subgroups as follows:

* **Subgroup A**, dealing, inter alia, with energy; industry; transportation; urban issues including related human settlements, air quality and health; waste management and disposal;
* **Subgroup B**, dealing, inter alia, with small islands and coastal zones; oceans and marine ecosystems; tropical cyclones, storm surges and sea level change;
* **Subgroup C**, dealing, inter alia, with unmanaged resources and terrestrial ecosystems, mountain regions, cryosphere, hydrology and terrestrial impacts of climate events such as floods;
* **Subgroup D**, dealing, inter alia, with desertification; droughts; agriculture; forests; land use including various forms of human settlements; health; management of water resources.

6.9.3 A peer review process should be incorporated in the preparation of the reports of the Working Group.

6.10 Working Group III

6.10.1 Working Group III should deal with cross-cutting economic and other issues related to climate change. Two issues have been identified below at this stage. The IPCC may add other issues at subsequent plenary sessions. The Working Group shall establish its work plan for tasks (a) and (b) below, which shall be available to the IPCC for subsequent review as its work proceeds.

(a) Technical assessments of the socio-economics of impacts, adaptation and mitigation of climate change over both the short and long term and at the regional and global levels. The work plan should, inter alia, consider the following topics: top-down and bottom up economic modelling while taking into account assumptions, variables and applicability to and in different national economic circumstances; the evolution of technological change; methods for risk assessment; methods for the generic assessment of response instruments provided, however, that none of these tasks shall involve the Working Group in making policy judgements.

(b) The Working Group should consider and develop as necessary a range of internally consistent scenarios for future emissions based on reasonable economic, demographic and technological projections, and taking account of gaps and uncertainties in available knowledge, especially concerning the evolution of socio-economic development and technology; where possible, policy assumptions should reflect their economic and social consequences. The scenarios are intended to assist Working Groups I and II in their assessment of a range of future changes of atmospheric composition, resulting climate changes, and their impacts.

This work should be carried out in consultation with Working Groups I and II.

6.10.2 A peer review process should be incorporated in the preparation of the reports of the Working Group.

6.11 Officers of the Working Groups

There shall be:

(a) 2 Co-Chairmen and 2 Vice-Chairmen for Working Group I; (however, for the election held at this eighth session only, the number of Vice-Chairmen would be 3; see paragraph 6.17.1);

(b) 2 Co-Chairmen and 8 Vice-Chairmen for Working Group II; the Vice-Chairmen will also serve as the Co-Chairmen of the four Subgroups of the Working Group (each Subgroup to have 2 Co-Chairmen);

(c) 2 Co-Chairmen and 2 Vice-Chairmen for Working Group III.

6.12 Membership of the IPCC Bureau and special invitees

6.12.1 Member States of the United Nations and of the World Meteorological Organization are eligible for election to the IPCC Bureau. A listing of such Members by regions is attached in Appendix F.

6.12.2 The IPCC Bureau shall consist of:

(a) The Chairman and the two Vice-Chairmen of the IPCC;

(b) The Co-Chairmen and the Vice-Chairmen of the 3 IPCC Working Groups;

(c) Six Regional Representatives, one from each of the following regions:

Africa
Asia
Europe
North and Central America
South America
South-West Pacific.

6.12.3 The Chairman of the Intergovernmental Negotiating Committee (INC) on Climate Change, while not a formal member of the Bureau, shall be invited in an ex-officio capacity to attend the IPCC, the Bureau and the Working Group sessions. From the time of the first Conference of the Parties to the FCCC, the Chairman of the Conference of the Parties shall also be invited in a similar capacity to the sessions of the IPCC, its Bureau and Working Groups.

6.12.4 The Chairman of the IPCC may, if he deems it desirable for the work of the Bureau, extend special invitations to others from time to time; the attendance of such special invitees may be restricted to particular agenda items.

6.13 Attendance at the sessions of the IPCC Bureau

The sessions of the Bureau are normally open only to the Bureau members and the special invitees. Each government represented in the Bureau may, however, send one other representative to the session if it deems this necessary.

6.14 Terms of reference of the IPCC Bureau

6.14.1 The IPCC Bureau shall:

(a) assist the Chairman of IPCC with decisions on the conduct of the IPCC sessions;
(b) assist the Chairman in monitoring the progress in and coordinating the work of the IPCC;
(c) assist the Chairman in assuring the adequacy and timely receipt of the financial contributions to the IPCC Trust Fund;
(d) perform such other duties as may be assigned to it by the Panel.

Terms of Reference of the Regional Representatives in the Bureau

6.14.2 The Regional Representatives should act as

(i) focal points for bringing together regional efforts and approaches in relation to the IPCC work programme and
(ii) stimulate networking on regional issues of concern covered by the IPCC.

6.15 Terms of office of the members of the IPCC Bureau

6.15.1 The IPCC Vice-Chairmen, all Co-Chairmen and Vice-Chairmen of the IPCC Working Groups and the Regional Representatives of the IPCC Bureau should be elected for a three-year period, their term beginning immediately upon election. The term of office of the current IPCC Chairman, already re-elected at the sixth session of the IPCC, should also terminate concurrently with that of the other members of the IPCC Bureau. However, should these terms of office expire between the sessions of the IPCC, the members shall continue in office until the election of new members by the IPCC.

6.15.2 Should the IPCC Chairman leave office for any reason, a new Chairman shall be elected by the Panel from among its members within 3 months. During that interim period, the Vice-Chairmen, in consultation with the Bureau, shall determine jointly ways and means of ensuring the continuation of the Panel's work.

6.15.3 The members of the IPCC Bureau are eligible for re-election. Should a member of the Bureau, other than the IPCC Chairman, leave office for any reason, the country will nominate a replacement for the remainder of the member's term of office.

6.16 Procedure for the election of the members of the IPCC Bureau

6.16.1 The Chairman of the IPCC will invite governments to nominate candidates for election to the offices of the Co-Chairmen of the Working Groups and of the Vice-Chairmen of the IPCC and its Working Groups. It is highly desirable that

governments ensure the scientific-technical integrity and credibility of the IPCC by nominating relevant experts for participation in the work of the Panel. Thus, the Chairman will request that a government indicate the relevant expertise of the candidate it nominates.

6.16.2 For the election at this eighth session of the IPCC, the Co-Chairmen and the Vice-Chairmen were chosen so that developed and developing countries were about equally represented. In this context, this arrangement was viewed as a first step towards achieving a more balanced representation in the future.

6.17 Election of the IPCC Bureau

6.17.1 The IPCC elected the Bureau by consensus. The Panel decided that, for this election only, the number of Vice-Chairmen in Working Group I would be 3. This was to allow for balanced geographical representation.

6.17.2 The membership of the Bureau is:

Members of the IPCC Bureau

IPCC	Chair	Prof. B. Bolin Sweden
	Vice-Chairs	Saudi Arabia Dr. A. Al-Gain
		Russian Federation Prof. Yu. A. Izrael
WG I	Co-Chairs	United Kingdom Sir John Houghton
		Brazil Dr. L.G. Meira Filho
	Vice-Chairs	China Prof. Ding Yihui
		Germany Dr. H. Grassl
		Senegal Mr. M. Seck
WG II	Co-Chairs	United States Mr. Robert A. Reinstein
		Zimbabwe Dr. M.C. Zinyowera/ alternate Mrs. Karimanzira

Vice-Chairs who are also the Co-Chairs of

	Subgroup A	India Dr. M. Parabrahmam
		Japan Dr. K. Yokobori
	Subgroup B	The Netherlands Dr. P. Vellinga
		Venezuela Ing. Martha Perdomo
	Subgroup C	Argentina Dr. O. Canziani
		Switzerland Dr. M. Beniston
	Subgroup D	France Dr. M. Petit
		Tunisia Mr. A. Hentati
WG III	Co-Chairs	Canada Ms. E. Dowdeswell
		Republic of Korea Dr. H. Lee
	Vice-Chairs	Kenya Prof. R.S. Odingo
		Norway Mr. T. Hanisch

Regional Representatives

Region I Africa	Nigeria Dr. J.A. Adejokun
Region II Asia	Kuwait Dr. H. Nasrallah
Region III South America	Colombia Dr. N. Sabogal
Region IV North and Central America	Cuba Dr. F. Fajardo Moros
Region V South-West Pacific	Australia Dr. W.J. McGregor Tegart
Region VI Europe	Spain Dr. M. Bautista Perez

7. IPCC BUDGET AND OTHER SUPPORT (agenda item 7)

7.1 The IPCC Secretary introduced the document on IPCC Budget and Other Support. The document is attached in Appendix G. Severe cash flow problems continued to be encountered. It was noted that the new workplans called for workshops and meetings early in 1993 requiring that their planning begin in a few days. This would point to the need for the receipt of funds by the beginning of December 1992 in the IPCC Trust Fund. The IPCC Secretariat was also stretched very thin and needed assistance.

7.2 Switzerland announced a pledge of CHF 50,000 for the work on emissions inventories and CHF 40,000 for general purposes. Germany and Japan pledged DM 180,000 and $ 50,000 respectively for 1993.

7.3 The IPCC requested that

* a budget proposal be presented to its next session in the light of the workplans being developed and that the proposal include a timeline chart of the meetings of the IPCC, its Bureau, Working Groups and Subgroups;
* estimates of publication, translation and workshops costs be included in the next budget proposal;
* quarterly reports be forwarded to governments on receipts and expenditures and on projected requirements in the IPCC Trust Fund.

7.4 The IPCC agreed with the Chairman's suggestion that the probable budget for 1993 proposed in Appendix G be taken to be the working budget for 1993; the Panel might modify the budget if necessary in later stages. Further, a report on the details of expenditures together with cash flow information should be submitted to the next session of the IPCC.

7.5 The Panel expressed its appreciation to the donors for their financial and other support to its activities. Countries with economies in transition also needed assistance to participate in IPCC, particularly in preparing and reviewing reports.

7.6 A suggestion was made to have as many IPCC meetings in Geneva as possible.

8. APPROVAL OF THE DRAFT REPORT OF THE SEVENTH SESSION OF IPCC (agenda item 8)

The draft report of the subject session was adopted.

9. OTHER BUSINESS (agenda item 9)

There was none.

10. ADOPTION OF THE REPORT OF THE SESSION (agenda item 10)

The part of the report on agenda item 6 (Report of the IPCC Task Force on IPCC Structure) had been adopted by the IPCC. The rest of the report would be submitted, in draft form, to the Panel for approval at its next session.

11. TIME AND PLACE OF THE NEXT SESSION (agenda item 11)

The Panel would meet in its next session from 29 to 30 June 1993 at the Palais des Nations in Geneva; the IPCC Bureau would meet in a one-day session on 28 June 1993 also at the Palais des Nations.

12. CLOSING OF THE SESSION (agenda item 12)

12.1 The session closed at 1800 hours on Friday, 13 November 1993.

12.2 The list of participants appears in Appendix H.

APPENDIX A

World Meteorological Organization
Organisation météorologique mondiale

Case postale N° 2300
1211 - GENEVA 2
SWITZERLAND

United Nations
Environment Programme

Programme des Nations Unies
pour l'Environnement

P.O.Box 30552 - Nairobi, Kenya

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

INTERGOVERNMENTAL PANEL
ON CLIMATE CHANGE
EIGHTH SESSION

IPCC-VIII/Doc. 1
(11.XI.1992)

Harare, 11-13 November 1992

AGENDA

1. OPENING OF THE SESSION
   - 1.1 Welcoming remarks by the representative of the Government of Zimbabwe
   - 1.2 Remarks by Prof. G.O.P. Obasi, Secretary-General of the World Meteorological Organization (WMO)
   - 1.3 Remarks by Dr. M.K. Tolba, Executive Director of the United Nations Environment Programme (UNEP)
   - 1.4 Remarks by Prof. B. Bolin, Chairman of the IPCC
   - 1.5 Adoption of the agenda
   - 1.6 Programme of work of the session
2. CONTINUING WORK PROGRAMME OF IPCC
3. RESOURCE-BUILDING IN THE DEVELOPING COUNTRIES
4. COUNTRY STUDIES
5. REVIEW PROCEDURES AND PUBLICATION OF THE IPCC REPORTS AND OF THE UNDERLYING SUPPORTING MATERIAL
6. REPORT OF THE IPCC TASK FORCE ON IPCC STRUCTURE
7. IPCC BUDGET AND OTHER SUPPORT
8. APPROVAL OF THE DRAFT REPORT OF THE SEVENTH SESSION OF IPCC (GENEVA, FEBRUARY 1992)
9. OTHER BUSINESS
10. ADOPTION OF THE REPORT OF THE SESSION
11. TIME AND PLACE OF THE NEXT SESSION
12. CLOSING OF THE SESSION

Report of the Chairman of the Science Assessment working group of IPCC, including a Provisional Workplan for IPCC WG1 1992-95

Submitted to the Eighth Session of IPCC, Harare, Zimbabwe, 11-13 Nov 1992.

1. The 1992 IPCC Supplement

1.1 The substance of the Science Assessment component of the 1992 Supplement was agreed at the WG1 plenary held in Guangzhou, China, in January 1992, after intensive work by 115 lead authors/contributors from 21 countries, and 341 reviewers from 60 countries and 19 non-governmental organisations.. It reaffirmed, or found no reason to question, the key conclusions of the 1990 Science Assessment but also reported significant new research concerning:

- the climatic effects of ozone depletion and tropospheric aerosol.
- transient climate simulations using coupled ocean-atmosphere GCMS
- recent trends in diurnal temperature range, and in hemispheric and land/sea surface air temperatures

2. IPCC guidelines for national inventories of net emissions of greenhouse gases

2.1. Work continued on the development of IPCC guidelines, with assistance from the OECD and IEA. In July 1992, under financial support from UNEP, Dr Buruhani S Nyenzi of the Tanzanian Directorate of Meteorology, joined the WG1 secretariat in Bracknell to provide organisational support for the work.

2.2 A full progress report on this work, including a detailed workplan to the end of 1993, appears separately as **IPCC-VIII/Doc.10.**

3. IPCC/Woods Hole workshop on Biotic Feedbacks in the Global Climate System

3.1. The aim of this workshop, organized in collaboration with the Woods Hole Research Center, USA and held during 25-29 October 1992, was to review progress in identifying those processes which will determine the answer to the question: "Will the marine and terrestrial biospheres, as they respond now and in the future to climate and other changes, diminish or augment the effects of the human-induced rise in atmospheric concentrations of greenhouse gases?" A workshop statement representing the collective view of the participants will be released shortly. The statement does not carry official IPCC 'approval' but it represents important ground work in the preparation of the next science assessment and ultimately in establishing how to meet the requirements of Article 2 of the Climate Convention.

4. Future IPCC Science Assessment workplan 1992-1995.

4.1. At its fifth plenary session (Geneva, March 1991) IPCC agreed to conduct a second assessment in the 1994-95 timeframe, and the proposals below anticipate completion of a second, full assessment in 1995 which will provide the same comprehensive cover of the science as did the 1990 report. However the scientific community, who have put a great deal of effort into the 1990 and 1992 reports, now need some respite from the demands of WG1 so that they can progress as rapidly as possible their scientific work.

4.2 At Annex 1 is a provisional list of chapter headings for the 1995 science assessment. We invite written suggestions concerning this. The list is based on current perception of the key scientific issues and, as our

understanding of climate processes evolves, it is likely that there will be changes in the detail of Annex. A flexible approach is therefore essential and, in light of this, detailed preparation of the main part of the 1995 report will commence in late 1993/early 1994.

Global Warming Potential

4.3. It is anticipated that, in order to inform the first Conference of the Parties to the Convention about latest scientific thinking on the relative importance of different GGs, IPCC WG1 should prepare, by mid-1994, guidance for policymakers on radiative forcing and the concept of the Global Warming Potential (GWP).. With financial support from the UK and in conjunction with the WG1 secretariat, Dr Neil Harris of the Ozone Secretariat of the British Antarctic Survey, will assist coordination of this work.

Climate effects of ozone and aerosols

4.4 An IPCC WG1 workshop on the influences of ozone change and of aerosols[1] on global and large-scale regional climate will be held in 1993. The output from this workshop will feed into those chapters of the second assessment dealing with Radiative Forcing and with General Circulation Models.

Joint WG1/WG2 workshop on Article 2 of the Climate Convention

4.5 An IPCC workshop will be held in late 1993/early 1994, jointly with WG2, to explore current knowledge and uncertainties, and to assess methodologies related to two issues embodied in Article 2 of the Climate Convention:

(a) the requirements of impact assessments for the best possible information regarding likely regional climate change;
(b) the stabilization of GG concentrations and the implications of different stabilization scenarios for the impact on ecosystems..

Joint WG1/WG2 workshop on Climatic Causes and the Climatic Repercussions of Drought & Desertification

4.6 An IPCC workshop, jointly with WG2, is being planned for 1994 to address the problems of drought and desertification, particularly the interaction between land-use, water resources (including precipitation patterns) and climate change (both due to natural variability and long-term anthropogenic causes).

Workplan

4.7 An outline workplan, culminating in publication of a second IPCC Science Assessment, appears at Annex 2. An important feature of the workplan is the substantial amount of time scheduled for peer and country review of the draft reports - two and three months respectively.

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1 While all types of aerosol will be included, an important aim of this workshop is to begin to answer those questions raised in the 1992 IPCC Supplement concerning anthropogenic aerosols and their associated radiative forcing.

Suggested Outline for the 1995 IPCC Science Assessment.

Executive Summary

Policymakers Summary

Chapter 1: Greenhouse Gases

- Contemporary and paleo records of atmospheric distributions and trends in GGs and precursors.
- Past, current and future sources, sinks, reservoirs and transformations of GGs and precursors. Particular focus on the carbon cycle:

Chapter 2: Aerosols

- Contemporary and paleo records of atmospheric distributions and trends in aerosols and precursors.
- Past, current and future sources, sinks, reservoirs and transformations of aerosols and precursors.

Chapter 3: Radiative Forcing

- Solar forcing.
- Microphysical, chemical, and optical properties of tropospheric aerosols.
- Radiative forcing of greenhouse gases, aerosols and their precursors.
- Direct and indirect Global Warming Potentials for the contemporary and future atmospheres.

Chapter 4: Climate Processes

- Climate processes, particularly those that affect water vapour, clouds, air-sea exchange, ocean circulation, ice-albedo, land-surface.
- Model representation/parametrizations and tuning (e.g., heat and salinity flux corrections)".
- Results from recent field experiments in terms of improving model formulations and validating models, e.g., WOCE, TOGA, FIFE, FIRE and ARM

Chapter 5: Model Predictions and Validation
(This chapter may become two chapters in order to devote sufficient space and emphasis to the important issue of regional climate analyses and rgional climate prediction .)

- Transient and equilibrium coupled GCM model predictions of key climate parameters with a limited number of identical trace gas scenarios (issue of initial conditions needs to be considered).
- Address the issue of "carbon dioxide equivalence", aerosols and atmospheric ozone
- Regional changes using GCMs, statistical and nested models.
- Simulations and predictions of seasonal, inter-annual and inter-decadal changes in climate.
- Comparison of models and observations ('model validation'), by region, for: (i) the contemporary climate, and (ii) for the last 100 years by using more realistic transient coupled GCM model calculations.
- Predictions in the frequency and intensity of extreme events, e.g., monsoon circulation, typhoons and hurricanes, drought, and extreme rainfall events.
- Predictability of climate?

Chapter 6: Observed Climate Variability and Change

- Contemporary and palaeo-climate variability, climate change, and climate change indicators.
- Develop the "enhanced greenhouse effect" fingerprint approach.
- Recent observed unusual regional weather patterns.

Chapter 7: Sea Level Rise

- Contemporary and paleo regional and global trends in sea level
- Processes responsible for local, regional and global changes in sea level
- Mass balance of Antarctica and Greenland ice sheets.
- Model predictions of sea level rise

Chapter 8 Biotic responses to environmental change and feedbacks to climate
(Joint contribution from WG1/WG2)

- Effects of changes in climate and atmospheric composition on ecosystem structure, processes, and functions.
- Effect of ecosystem responses on atmospheric composition and climate.

Chapter 9 Narrowing the Uncertainties

Annex National inventories of greenhouse gas sources and sinks, aerosol and precursor emissions
(or may be published as a separate report)

Outline workplan for IPCC Working Group 1 - 1992-1995

	Second IPCC Scientific Assessment	Development of IPCC Guidelines for National Inventories of Net Greenhouse Gas Emissions
1992		
Sep		30: Pilot training workshop on the draft methodology. Bracknell. UK
Oct	26-29: 'Biotic feedbacks' workshop. Woods Hole. USA	1: Workshop on Transparency between existing methodologies. Bracknell. UK
Nov/Dec	Distribution of WG1 newsletter in order to inform specialists and member countries about WG1 work programme. and to facilitate participation in it.	30/11-2/12: Latin American regional training workshop on inventory methodology. Sao Paolo. Brazil (hosted by INPE)
1993		
Jan/Feb	Meeting of experts on the Carbon cycle and radiative forcing to plan the preparation of report on Radiative Effects of Trace Gases by mid-1994. *Date and place to be decided.*	16-18: Southern and Eastern African training workshop on inventory methodology. Lusaka. Zambia
Mar		ADB Regional symposium. Bangkok. This will provide feedback on experience with the draft methodology.by the eight countries involved in the ADB Regional Study on Global Environmental Issues. *Date to be decided.* Completion of module of Simplified Workbook dealing with land use and agricultural burning
Apr/May	Workshop on ozone change and aerosols. and their impact on climate. Hamburg. Germany. *Date to be decided.*	First edition of Reference Manual completed (a revision of the full IPCC/OECD 'Background document produced in August 1991) Completion of module of Simplified Workbook dealing with major CH_4 source categories
Jun/July/Aug		Draft IPCC Guidelines completed and sent out for peer review
(Late 1993 or early 1994)	WG1/WG2 joint conference on (a) stabilization of greenhouse gas concentrations and the implications for impacts. and (b) regional change information scenarios and inputs to impact assessments. *Date. place and exact workshop title to be decided.*	

	Second IPCC Scientific Assessment (contd)	Development of IPCC Guidelines for National Inventories of Net Greenhouse Gas Emissions (contd)
1993		
Nov/Dec	Meeting of experts to agree detailed structure and content of 1995 science assessment. Agreed structure circulated widely and contributions invited.	Distribution of approved 'Phase I' guidelines
1994		
Jan/Feb/Mar	Meeting of lead authors to produce first draft of mid-1994 report on Radiative Effects of Trace Gases. Drafts if full text and of 'policymaker's summary statement' then undergo six week peer review.	Workshop on the Phase I Guidelines focussing on comparison of aggregated country data with 'top-down' estimates. Workshop summary statement prepared and sent for six week review by participants.
Apr/May	WG1/WG2 joint conference on drought and desertification.*Date, place and exact workshop title to be decided.*	
	Lead authors of mid-1994 'Radiative Effects' prepare final draft. Drafts of full text and summary statement then undergo six week country review.	Revised workshop statement sent for six week country review
Jun/Jul	WG1 plenary to approve summary statements on Radiative Effects of Trace Gases and on the IPCC Phase I Guidelines for national net emissions. Submitted for approval by IPCC Plenary later in the same period.	
Aug/Sep/Oct	Workshops covering all topics of 1995 scientific assessment.	
Nov/Dec	Meeting of lead authors to produce first draft of full scientific material (FSM) and of policymaker's summary (PMS) of the second science assessment.	
1995		
Jan/Feb	Peer review of first draft of FSM and of PMS (two months)	
Mar	Lead authors produce second drafts of FSM and PMS on the basis of comments from peer review.	
Mar/Apr/May	IPCC country review of second draft of PMS (three months)	
Jun/July	Lead Authors complete final draft of FSM Text of PMS agreed by WG1 plenary	
Aug/Sep	Approval of PMS by IPCC Plenary.	

CONTINUING WORK PROGRAM OF THE IPCC
OUTLOOK FOR NEW WORKING GROUP II

It is proposed that the continuing work of the IPCC in the areas of impacts and response options be undertaken according to the following outline or framework. This outline does not contain specific tasks or dates for completion, as these should be determined by the participants in the first meeting of the proposed Working Group II. In addition, certain elements of this continuing work are continuing directly from tasks undertaken as part of preparations of the 1992 Supplement. These include the current Working Group II work in developing guidelines for impacts assessments and identifying regional and national components of systematic observation programs for impact assessments and the current Working Group III work in compiling an inventory of technology characteristics, conducting thematic studies on specific response options and synthesizing them.

This outline was developed based on discussions at the August 1992 Bureau meeting, and was commented on extensively by the current Working Group Chairs, Vice-Chairs, and Subgroup Co-Chairs of the current Working Groups II and III following this meeting. While not all views could be fully represented, this outline presents a foundation upon which the participants in the first meeting of the proposed Working Group II can build.

The new Working Group II will prepare an integrated global and regional assessment of the state of knowledge regarding the impacts of climate change and options for adapting to or mitigating such climate change to be included in the IPCC's Second Assessment Report (SAR). In developing this assessment, the subgroups of the Working Group will undertake certain specific activities, such as thematic or regional workshops, and produce certain products, including inventories of technologies and methodologies for carrying out analyses, that may be of specific use to individual countries in evaluating their vulnerability to climate change and their options for responding to it.

I. INVENTORY OF TECHNOLOGIES, TECHNIQUES AND METHODS

The Working Group will prepare an inventory of technologies, techniques, and methods to mitigate or adapt to climate change. The inventory will be supported by thematic studies and analyses to assist countries in choosing technologies and combinations of technologies. This work should facilitate the expeditious and efficient transfer of technologies (in the broadest sense), particularly to developing countries.

WORKPLAN

-- Subgroup A on energy, industry, transportation, urban issues including related human settlements, air quality and health, and waste management and disposal to develop a technology characteristics inventory. There will be an appropriate balance of technologies, relying on, where appropriate, thematic studies. This effort will build on existing work.

-- Subgroup B on coastal zones, small islands, oceans and marine ecosystems to prepare inventory of technologies, techniques and methods for mitigating or adapting to climate change in these areas, particularly for those related to reducing vulnerability to tropical cyclones, storm surges, and sea level change (this would include the inventory for methods of coastal zone management).

-- Subgroup C on unmanaged resources and terrestrial ecosystems, including mountain regions, the cryosphere, and hydrology, to prepare inventory of technologies, techniques and methods related to mitigating or adapting to climate change in these areas, particularly those for reducing vulnerability of terrestrial systems to climate events.

-- Subgroup D on drought, desertification, water resource management, agriculture, forestry, and land use to prepare inventory of technologies, techniques and methods related to mitigating or adapting to climate change in these areas.

II. METHODOLOGIES

The Working Group will prepare methodologies, for use at national, regional and global scales, for:

A. assessing and monitoring impacts of climate change, including geophysical impacts, ecosystem impacts, and monitoring and data estimation methods and practices;

B. assessing vulnerability to the impacts of climate change and further identifying sensitivities to different magnitudes and rates of climate change, including temperature, hydrologic cycle and sea-level change;

C. assessing the economic, social and cultural implications of this vulnerability and possible actions to reduce greenhouse gas emissions and vulnerability; and,

D. assessing the results of actions to reduce greenhouse gas emissions and vulnerability to the impacts of climate change, especially actions by industrialized countries relative to provisions of the climate convention, and assessing the costs and benefits of these reductions on areas within the Working Group's purview.

WORKPLAN

-- Subgroup A will develop methodologies related to energy, industry, transportation, urban issues, and waste management and disposal.

-- Subgroup B will develop methodologies related to coastal zones, small islands, oceans and marine ecosystems, particularly vulnerability to changes in sea level and in the intensity and frequency of tropical cyclones and storm surges.

. this activity will focus on updating the existing methodology;

-- Subgroup C will develop methodologies related to unmanaged resources and terrestrial ecosystems, including mountain systems, hydrology and the cryosphere, and impacts of climate events such as storms and floods.

. This may or may not include methodologies for assessing geophysical impacts, as this depends on the workplan for WG I;

. This activity will include the development of a methodology to assess the consequences of reducing CO_2 on forests, wetlands, and other natural systems.

-- Subgroup D will develop methodologies relating to agriculture, forestry, land use and water resources management, particularly the impacts of droughts and desertification;

. This activity will include the development of methodologies for assessing potential actions associated with:

- CO_2 emissions from forests, agriculture, and rangelands;
- CO_2 absorbtion by sinks, including forests and agriculture;
- CH_4 from animals; and,
- CH_4 on rice paddies.

III. WORKSHOPS

The Working Group will hold workshops on issues of specific interest to the subgroups, including regional issues. In conducting these workshops, it will liaison with other IPCC Working Groups and international institutions and organizations in order to ensure cooperation on common or overlapping work.

WORKPLAN

-- Subgroup A to hold, in cooperation where appropriate with IEA, IAEA, OECD and others, workshops on:

. energy and industry issues such as:
- end-use energy efficiency;
- urban road transport
- methane emission abatement;
- district heating/waste incineration;

. in cooperation with WHO, WMO, UNEP, and PAHO, the implications of climate change on health;

. vulnerability of urban settlements to the impacts of climate change; and,

. other subjects as determined by the Working Group.

-- Subgroup B to hold, in cooperation where appropriate with the UNEP Regional Seas Programme, IOC, and others, workshops on:

. coastal zone management experiences; and,

. other subjects as determined by the Working Group.

-- Subgroup C to hold, in cooperation where appropriate with FAO, ITTO and others, workshops on:

. vulnerability of regional terrestrial ecosystems and unmanaged resources to climate change; and,

. other subjects as determined by the Working Group;

-- Subgroup D to hold, in cooperation where appropriate with FAO, ITTO, and others, workshops on subjects as determined by the Working Group.

-- Subgroups B, C, and D, in cooperation as appropriate with Subgroup A and Working Group I, to conduct jointly workshops on a common methodology for assessing the impacts of climate change and the vulnerability of natural and managed systems to these impacts in order to assist countries, particularly developing countries, in conducting vulnerability analyses, identifying critical magnitudes and rates of impacts, and identifying critically sensitive systems and areas.

IV. GLOBAL AND REGIONAL ASSESSMENTS

As its input to the SAR, the Working Group will prepare global and regional assessments on the state of knowledge regarding vulnerability, adaptation and mitigation, and progress in each area covered by subgroups, including degree of institution and capacity building in developing countries. These assessments will draw on the individual tasks carried out by the subgroups, including the inventories and methodologies, and will reflect work priorities for the 1992-95 timeframe.

WORKPLAN

-- Each subgroup to prepare its synthesis report as input to the 1995 assessment.

V. WORK IN COOPERATION WITH WG I AND NEW WG III

The Working Group will, in cooperation with Working Group I and the new Working

Group III:

-- provide emissions trends from sectors and activities assessed by individual subgroups as input to the Working Group III task on emissions scenarios;

-- cooperate with Working Group I on activities related to the objective of the Framework Convention on Climate Change, including the Working Group I work on the relationship between emissions and atmospheric concentrations (the carbon cycle) and the linkage of regional climate change estimates with the Working Group II work on vulnerabilities and sensitivities, especially those of ecosystems (a joint workshop might be held in early 1994).

GENERAL NOTES

1. Institution and capacity building should be integrated into all IPCC work programmes and outputs.

2. Existing work being carried out by current IPCC groups and subgroups should be identified and prioritized for integration into the workplan. The chairs of existing (old) Working Groups II and III have consulted with the chairs of existing subgroups and others to assure full information is available.

3. Development of methodologies, particularly for impact assessments, should be coordinated and, as much as possible, harmonized across subgroups. For example, the existing work of Japan and the U.K in developing preliminary guidelines for impacts assessments is very useful in this regard and will be continued.

PRELIMINARY ILLUSTRATIVE OUTLINE FOR THE WORKING GROUP II CONTRIBUTION TO THE IPCC 1995 SECOND ASSESSMENT REPORT

SUBGROUP A: Energy, industry, transportation, urban issues including related human settlements, air quality and health, and waste management and disposal

Executive Summary

Policymakers Summary

Chapter 1: Introduction

- Scope of related human activities
- Impacts of climate change on related human activities
- GHG emissions associated with related human activities

Chapter 2: Energy

- Impacts of climate change on energy sources (e.g., biomass, hydro-electricity, electricity and heating/cooling demand
- Adaptation for energy sources (e.g., combustion efficiency, fuel substitution, energy cascading, GHGs emission controls such as methane flaring)

Chapter 3: Industry

- Impacts of climate change on industry activities (e.g., raw material and energy availability, costs and competitiveness)
- Adaptation for industry (e.g., efficient use of raw material and energy, material and energy substitution, restructuring relocation)
- Mitigation for industry (e.g., CFCs phase-out, efficient use of raw material and energy, material and energy substitution aerosol emission control, restructuring)

Chapter 4: Transportation

- Impacts of climate change on transportation (e.g., availability of infrastructure such as non-frozen ports, demand increases induced by human migrations)
- Adaptation for transportation (e.g., improvement in infrastructure, modal shifts)
- Mitigation for transportation (e.g., fuel efficiency, increased public transport, modal shifts)

Chapter 5: Urban issues including related human settlements in quality and health

- Impacts of climate change related to urban issues (e.g., air quality, health)
- Adaptation related urban issues (e.g., urban planning, relocation)
- Mitigation related urban issues (e.g., district heating/cooling, CHP, building/housing fuel efficiency, trees and vegetation)

Chapter 6: Waste management and disposal

- Impacts of climate change on waste management and disposal (e.g., GHG emissions, air quality, health)
- Adaptation in waste management and disposal (e.g., relocation methane collection)
- Mitigation in waste management and disposal (e.g., waste recycling, methane collection)

Chapter 7: Methodologies (may be an attachment)

- Methodologies for impact assessments (e.g., development of guidelines)
- Methodologies for technology option assessments (e.g., guidelines for costs/benefits assessments, full fuel/life cycle assessment, embodied carbon treatment, factor analyses), least cost transportation and utility planning

Chapter 8: Summary and conclusions

- General observations on impacts, adaptation and mitigation
- Regional observations on impacts, adaptation and mitigation

Attachment: Technology characterisation inventory

Subgroup B: Coastal zones, small islands, oceans and marine ecosystems, changes in sea level, tropical cyclones and storm surges

Executive Summary

Policymakers Summary

Chapter 1: Introduction

- Short evaluation of present knowledge with regard to climate change (WG.I);
- ocean-atmosphere;
- description of applied scenarios and assumptions;
- description of the ecological and socio-economic characteristics and functions of oceans, coastal zones and small islands with regard to climate change;
- research tools; process analyses, palaeo studies.

Chapter 2: Abiotic and Ecological Impacts

- Changes in physical properties and related primary effects
- Abiotic impacts
- Ecological impacts on oceans
- Ecological impacts on coastal zones and small islands

Chapter 3: Socio- economic impacts

- Socio-economic impacts on oceans
- Socio- economic impacts on coastal zones and small island nations

Chapter 4: Methodologies

- Vulnerability assessments
- Evaluation of ways and means to integrate GCMs with biological modelling and modelling of human activities.

(Chapter 5: Critical levels and critical rates vis-a-vis impacts and adaptations)

(Before 1995 it may not be possible to determine actual critical levels and critical rates. Through sensitivity analyses and a what-if approach however, preliminary indications of critical levels and critical rates might become available).

- Sea Level Rise
- Temperature Change
- Other Climate Parameters

Chapter 6: Strategies for adaptation and mitigation

- Coastal Zones (CZM);
- Small Islands;
- Continental Shores;
- Deltas;
- Oceans.

Chapter 7: Production of regional maps describing relevant characteristics

- Relative sea Level changes, historic and, if possible, a range of projections;

- Areas vulnerable to SLR and climate change.

Chapter 8. Case studies and workshops

Chapter 9. Aspects and questions for consideration by the broader research and monitoring community.uggested outline for the 1995 Assessment Subgroup C.

Subgroup C: Unmanaged resources and terrestrial ecosystems, mountain regions, cryosphere, hydrology and terrestrial impacts of extreme events.

Executive Summary

Policy Makers Summary

Chapter 1 : Unmanaged resources and terrestrial ecosystems

- boreal forests - vulnerability to climate change and adaptation strategies
- temperate forests - vulnerability to climate change and adaptation strategies
- tropical forests - vulnerability to climate change and adaptation strategies
- wetlands - vulnerability to climate change and adaptation strategies

Chapter 2 : Mountain regions

- vulnerability to climate change
- socio-economic impacts of climate change
- alpine permafrost areas - stability and spatial analysis based on paleo-untemporary records

Chapter 3 : Cryosphere

- contemporary and historical records of snow cover
- analysis of stability of permafrost
- climate change and permafrost degradation - gas release and impacts and vegetation cover and stability of structures
- stability of ice sheets

Chapter 4 : Hydrology

- contemporary and terrestrial records
- regional changes of precipitation due to climate change
- groundwater resources and vulnerability to climate change

Chapter 5 : Terrestrial impacts of extreme events

- contemporary and historical records of extreme events - storms, cyclones, wildfires
- regional changes due to climate change
- socio-economic impacts
- adaptation strategies

Methodologies for assessing impacts - rates of change, magnitude of changes.
Methodologies for evaluating adaptive strategies must be inherent in all the topics treated in subgraphs C and D.

Subgroup D: Droughts and desertification, management of water resources, agriculture, managed forests and land use.

Executive Summary

Policy Makers Summary

Chapter 1: Droughts

- contemporary and historical records of droughts
- regional vulnerability to extreme events including frequency
- adaptation strategies

Chapter 2: Desertification

- regional vulnerability to desertification
- socio-economic impacts
- adaptation strategies

Chapter 3: Agriculture

- rainfed - vulnerability to climate change and adaptation strategies
- irrigated - vulnerability to climate change and adaptation strategies
- agroforestry - vulnerability to climate change and adaptation strategies
- mitigation strategies

Chapter 4: Managed forests

- boreal - vulnerability to climate change and adaptation strategies
- temperate - vulnerability to climate change and adaptation strategies
- tropical - vulnerability to climate change and adaptation strategies
- mitigation strategies

Chapter 5: Management of water resources

- arid and semi-arid regions - vulnerability to climate change
- small-island states - vulnerability to climate change
- adaptation strategies for changing hydrologic regimes

FUTURE TASKS FOR THE IPCC

Report and proposals from the IPCC Chairman

The Framework Convention for Climate Change has been signed by 156 countries. The convention will enter into force three months after it has been ratified by the 50th country and the appropriate instruments have been deposited. On October 30, 1992 it had already been ratified by four countries. The secretary of the INC expects that a first meeting of the Parties of the Convention will take place in the latter part of 1994 or early 1995.

The Climate Convention envisages, however, preparatory work, which will be carried out under the auspices of the Interim Secretariat. The scope of this work will supposedly be decided upon at the INC meeting in December this year. In the meantime the IPCC should develop its own workplan. I have been requested by the Chairman of the INC to report on the IPCC plans at the December meeting.

The major tasks for this eighth session of the IPCC are:

* **to decide on the future IPCC Structure** and the modes of our work. I hope that this can be done rather quickly on the basis of constructive proposals from the Task Force that was created by the IPCC at its 6th session on October 1991.

* **to agree on a workplan.** We need to take stock of where we are in the assessment of the climate issue and determine how we can fulfil the tasks given to us in the best possible way.

Another complete assessment must be available to the INC at the time when the Convention enters into force or soon thereafter. It is, however, important to accept the views of many scientists that assessments of the kind that the IPCC is carrying out cannot be done with too short intervals. The effort is that demanding that it distracts from important research that is ongoing. The participation by the best scientists in the field must be secured in order to maintain the credibility of the product. Further, the assessment must on this occasion not be done in a rush. The first IPCC report (1990) and its update (1992) will in the meantime serve as the IPCC views. I propose that the IPCC aims at the completion of a second full assessment by the middle of 1995 or soon thereafter. If so is desirable, a status report can be presented to the first session of the Parties of the Convention. It is also important to maintain a readiness to address urgent problems that may arise in the course of the next few year and be able to report the IPCC views to the INC as required. Accordingly, a workplan for IPCC for the next three years should be developed:

Working Group I should continue its work on scientific assessments in a similar manner as before. The experience from the last assessments suggests that the problem of regional predictions

of likely changes of climate resulting from alternative emission scenarios will remain at the top of the list of urgent themes. A recent deduction of a more detailed global distribution of anthropogenic forcing (including modification of the albedo due to sulphate emissions) is in this context most interesting. We may soon be able to compare in more detail climate model experiments based on such analyses with observed changes of climate so far.

It is also becoming obvious that we need to understand the global carbon cycle much better in order to be able to predict adequately the further increase of carbon dioxide in the atmosphere as a result of future emissions into the atmosphere. It is important to recognize that the fate of 10-30% of the anthropogenic emissions still cannot be accounted for and predictions of likely future concentrations will remain uncertain until the so-called "missing sink" has been identified. It is at present being assumed that to a first approximation this unknown sink will remain as in the past. My personal judgement is, however, that it may well diminish in the future and that accordingly the atmospheric carbon dioxide concentrations might increase more rapidly than foreseen so far. Whether this suspicion is justified or not will be considered by the next assessment.

Our insufficient knowledge of the carbon cycle implies, however, that we as yet are not able to determine with good accuracy the natural sources and sinks for carbon dioxide and methane (and as a matter of fact neither for nitrous oxide). It is important to note that the Convention presupposes that the national contribution to the increasing greenhouse gas concentrations in the atmosphere, as a net sum of sources and sinks, will be determined. Under the auspices of Working Group I, in collaboration of OECD, work is under way to develop a methodology to achieve this. I do not, however, judge it is likely that a scientifically well established methodology will be available for still some time because of the present inadequate knowledge of the cycling of carbon in nature. The status of the ongoing work will be briefly reported to this IPCC session and further discussions will presumably take place then. Because of the prominence of this issue in the Climate Convention it may be desirable that a separate (progress) report on "Sources and Sinks for greenhouse Gases" be prepared and made available to the first meeting of the Parties of the Convention.

The new structure of the IPCC implies that Working Groups II and III will be combined into a new **Working Group II.** A number of tasks are under way.

-- Methodologies to be used for impact assessments have been developed by the past Working Group II. These should be further scrutinized and ultimately agreed upon. A programme for their systematic application need be developed with the aim of arriving at globally mapped sensitivities and what these imply (at country level) with regard to adaptation and mitigation.

-- Development of methodologies in general for Country Studies. The work has been a responsibility of Working Group III. A Workshop was arranged in Berkeley, California in September this year and a report is becoming available. There is much interest in such efforts and financial support is available from the Global Environmental Facility, GEF and from several donor countries, e.g., the US. The Workshop concluded that it is desirable that future country studies be presented in a reasonably standardized format in order to simplify intercomparisons between countries, which will be of importance for the implementation process to be lead by the Parties to the Convention. The issues of impacts studies and country studies should be brought together into a common effort. This work should be pursued by the new Working Group II Subgroup C.

-- Minimizing of net greenhouse gas emissions from forestry and agriculture. This work has been carried out by Working Group III, Subgroup AFOS. The ongoing work within Working Group I to assess sources and sinks for greenhouse gases will also contribute towards clarifying the management possibilities to decrease sources and increase sinks. Management strategies should be developed and possibly be included in an early report to the Parties of the Climate Convention (cf above under Working Group I). Work in this area will be the responsibility of the Subgroup C.

-- Vulnerability to sea level rise. Work has been carried out by Working Group III, Subgroup CZMS. It has been agreed that the Netherlands's Government is inviting to an international Conference on Coastal Zone Management to be held in the Netherlands in November 1993. It is an important contribution to the IPCC assessments of the national/regional vulnerability to sea level rise and result in an outline of strategies for prevention and adaptation. Further information about these activities will be available at the session. Responsibility for work in this field will be under the Subgroup B.

-- Technological Assessments, i.e., the development of an inventory of energy-and-industry-related technological options for greenhouse gas emissions control. The work has been carried out by Working Group III, Subgroup EIS and to be continued under Subgroup A. It should be further coordinated with similar efforts by other international organizations and by individual countries.

The new IPCC structure foresees the formation of a new Working Group III to deal with Cross-cutting issues related to climate change. Two issues have been identified by the Task Force for Restructuring of the IPCC:

-- Technical assessment of the economics of climate change.
-- Emission scenarios.

It is important to recognize that the IPCC efforts must not be limited to economics in a more narrow sense, but should also include associated social issues. Obviously the two objectives are

closely related. The development of emission scenarios is based on the availability of macro-economic models. An assessment of the possibilities and limitations of such models is a pre-requisite for their adequate use for emission scenarios development. It is proposed that an assessment of the economics of climate change be initiated and that the development of scenarios for the next IPCC assessment be based on the outcome of such an assessment.

Since the seventh session of the IPCC (February 1992), I have explored possible ways and means to carry out an assessment of the economics of climate change. I have attended several workshops and conferences on the subject (for example one arranged by IIASA in September this year). I have been in contact with a good number of leading scientists in the field and the following proposal is based on these consultations.

* I note that the scientific efforts in the field has grown very rapidly during the very last few years. Accordingly, a rather rich scientific literature on the subjects exists. It is obviously possible to carry out a scientific assessment of our knowledge and understanding of the field in a manner similar to what has been done for the climate system. For the success of this process it is essential to be able to recruit scientists of comparable stature to the experts in Working Group I.

* The aim should not be to evaluate specific country policies or to recommend specific economic policies.

* The IPCC should discuss the key themes to be subject for an assessment, request the Working Group III to elaborate on these and authorize the initiation of the assessment. In the light of the knowledge and experience I have gained in preparing for this undertaking I am anxious to assist in this process.

A group of well-established scientists in the field should be brought together under the auspices of the Executives of the Working Group for final formulation of the themes and the selection of lead authors. It is most important to secure a broad international representation and particularly to recognize the very different nature of the problems as experienced by developed and developing countries as well as by nations in economic transition. The work should then proceed in accordance with the general IPCC rules.

To initiate a first discussion by IPCC of the themes for assessment I offer the following suggestions and I invite delegates to present views:

- Assessments of the economics of impact, adaptation and mitigation of climate change over long time horizon and broad spatial scales. The international interdependence of countries of the world. These issues are not well

understood but are essential to the IPCC assessments. The analysis will include analysis of the role of assumed discount rates, investments policies, economic and social inertia of society. It is important to recognize the difference between :

  * High-income (developed) countries
  * Low-income (developing) countries

- Options and costs of reducing greenhouse gases emissions, i.e., mitigation. It is important to cover:

  * macro-economic "top-down" models, scenarios, strength and weaknesses,
  * engineering "Bottom-up" models,

- Decision-making under uncertainty

- Response strategy assessments - advantages and disadvantages of different policy instruments, e.g., carbon taxes, tradable emission permit, regulations etc. Their application on national, regional and international scale.

It is important that assessment of the scientific knowledge on all matters related to the issue of Climate Change be pursued in a manner similar to the one used by Working Group I. The IPCC should agree to the general aims for the Working Groups and Subgroups and decide on goal and timetables for their work until the completion of the next assessment.

There are may other international and intergovernmental organizations that concern themselves with the issue of climate change or special aspects of it. Rather than competing, the IPCC should establish clear working relationships with a selected number of them and in this manner broaden its role by supplying the Convention with assessments that include the work by these collaborating organizations. It is important to emphasize that different views on different issues in this way should not be hidden, but the analyses should rather aim at clarifying the reason for differing views. Ways and means to accomplish this need be developed.

I hope that these remarks and proposals can serve as a basis for the discussions at the IPCC 8th Plenary Session and I am looking forward to collaborate with all of you.

Stockholm, 11 November 1992

Bert Bolin
Chairman of IPCC

APPENDIX E

Excerpt from the introductory part of the
Chairman's Proposal
to the third and final session of the
IPCC Task Force on IPCC Structure
(Harare, 9-10 November 1992)

1. Terms of reference of the IPCC

The IPCC terms of reference are expressed in the relevant resolutions and decisions of the sponsoring organizations, viz., the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP). In addition, in accordance with paragraph 2 of article 21 on interim arrangements of the United Nations Framework Convention on Climate Change, "the head of the interim secretariat ..... will cooperate closely with the Intergovernmental Panel on Climate Change to ensure that the Panel can respond to the need for objective scientific and technical advice".

2. Principles Governing IPCC Work

The Principles Governing IPCC Work, adopted at the fifth session of the IPCC (Geneva, March 1991), continue without change.

3. The function of the IPCC

The function of the IPCC is to assess the available knowledge related to the science, potential impacts, mitigation/adadpation response options and the technical aspects of the economics of climate change and to provide technical and scientific advice to the interim secretariat of the UN Framework Convention on Climate Change.

4. Completion and review of IPCC work

4.1 The Panel should adopt procedures for the preparation, review, approval and publication of its reports and their underlying supporting material.

4.2 In this connection, the IPCC should establish the best possible relations with relevant global research and observation programmes in all fields related to its work. The planning and implementation of the research and observational activities, however, are not part of the IPCC responsibilities.

4.3 Summaries of available scientific and technical developments brought together for the consideration of the IPCC and its Working

Groups should be reviewed by other, independent scientists/experts. Such reviews should form an ongoing part of the IPCC assessment process. Differing views which are scientifically-based should be fully taken into account. This is necessary to judge the uncertainties in the conclusions of the IPCC.

5. Partnership between the developed and developing countries

5.1 The IPCC should draw on the widest possible scientific and technical expertise from the different regions of the world. Cooperation among scientific-technical individuals/ groups that work on the same or similar problems is essential in order to develop common analytical tools and data collection procedures, for example. This cooperation should engage the industrialized and the developing worlds to the maximum possible degree.

5.2 In the long term, objective and penetrating analyses of the climate change issue can be developed only in the context of a genuine partnership among all countries. This is true in the case of scientific and technical assessments which are the areas of responsibility of the IPCC, as well as in the area of research and observations. The latter should be widened and intensified more than at present within the contexts of the ongoing global research and observation programmes.

5.3 Much of the ongoing research related to climate change is carried out in the developed countries. This can lead to situations where, for example, studies of the impacts of climate change, or the scientific-technical analyses of alternative policy options, do not always recognize adequately the particular circumstances of the developing countries; such shortcomings are especially noticeable in relation to socio-economic studies. Hence, the organization of seminars and workshops as well as the secondment of scientists/experts from the developing to the developed countries, and vice versa, for joint scientific and other programmes needs to be more actively pursued than at present. The special situation of the developing countries should therefore be given attention as part and parcel of all the work carried out by the Panel and its Working Groups.

6. Efficiency of work and transparency

The structure of IPCC should have the flexibility to achieve the best possible efficiency in its work. It is at the same time essential that the IPCC activities be "transparent"; that is, more efforts should be made to keep nations well informed about ongoing IPCC activities and the nature and timing of the IPCC decision-making process, particularly with regard to socio-economic analyses.

MEMBERS OF THE UN AND WMO BY IPCC REGIONS

(as per 1-2-1993)

AFRICA (Region I)

Algeria
Angola
Benin
Botswana
Burkina Faso
Burundi
Cameroon
Cape Verde
Central African Republic
Chad
Comoros
Congo
Côte d'Ivoire
Djibouti
Egypt
Equatorial Guinea *
Ethiopia
France ** (French Dept. of Reunion
and Southern Ocean French Territories)
Gabon
Gambia
Ghana
Guinea
Guinea Bissau
Kenya
Lesotho
Liberia
Libyan Arab Jamahiriya
Madagascar
Malawi
Mali
Mauritania
Mauritius
Morocco
Mozambique
Namibia
Niger
Nigeria
Portugal ** (Madeira)
Rwanda
Sao Tome and Principe
Senegal
Seychelles
Sierra Leone
Somalia
Spain ** (Canary Islands)
Sudan
Swaziland

** not a member of WMO

** France = Region I, III, IV and VI
Portugal = Region I, II, V and VI
Spain = Region I and VI

Togo
Tunisia
Uganda
UK **
United Republic of Tanzania
Zaire
Zambia
Zimbabwe

** UK = Region I, V and VI

ASIA (Region II)

Afghanistan
Bahrain
Bangladesh
Bhutan *
Cambodia
China
Democratic People's Republic of Korea
Hong Kong
India
Iran, Islamic Republic of
Iraq
Japan
Kazakhstan *
Kuwait
Kyrgyzstan *
Lao People's Democratic Republic
Maldives
Mongolia
Myanmar
Nepal
Oman
Pakistan
Portugal **
Qatar
Republic of Korea
Republic of Yemen
Russian Federation **
Saudi Arabia
Sri Lanka
Tajikistan *
Thailand
Turkmenistan *
Uzbekistan
United Arab Emirates
Vietnam, Socialist Republic of

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* not a Member of WMO

** Portugal = Region I, II, V and VI
Russian Federation = Region II and VI

SOUTH AMERICA (Region III)

Argentina
Bolivia
Brazil
Chile
Colombia *
Ecuador
France * (French Dept. of Guyana)
Guyana
Paraguay
Peru
Suriname
Uruguay
Venezuela *

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* Colombia = Region III and IV
  France = Region I, III, IV and VI
  Venezuela = Region III and IV

NORTH AND CENTRAL AMERICA (Region IV)

Antigua and Barbuda *
Bahamas
Barbados
Belize
British Caribbean Territories
Canada
Colombia **
Costa Rica
Cuba
Dominica
Dominican Republic
El Salvador
France ** (French Depts. of Martinique, Guadeloupe and St. Piere and Miquelon)
Grenada *
Guatemala
Haiti
Honduras
Jamaica
Mexico
Netherlands Antilles
Nicaragua
Panama
St. Kitts and Nevis *
St. Lucia
St. Vincent and the Grenadines *
Trinidad and Tobago
USA **
Venezuela **

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* not a member of WMO

** France = Region I, III, IV and VI
   Colombia = Region III and IV
   USA = Region IV and V
   Venezuela = Region III and IV

SOUTH-WEST PACIFIC (Region V)

Australia
Brunei Darussalam
Federated States of Micronesia *
Fiji
French Polynesia
Indonesia
Malaysia
Marshall Islands *
New Caledonia
New Zealand
Papua New Guinea
Philippines
Portugal **
Samoa *
Singapore
Solomon Islands
UK **
USA **
Vanuatu

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* not a member of WMO

** Portugal = Region I, II, V and VI
UK = Region I, V and VI
USA = Region IV and V

EUROPE (Region VI)

Albania
Armenia
Azerbaijan *
Austria
Belarus
Belgium
Bosnia and Herzegovina *
Bulgaria
Croatia
Cyprus
Czechoslovakia
Denmark
Estonia
Finland
France **
Germany
Georgia *
Greece
Hungary, Republic of
Iceland
Ireland
Israel
Italy
Jordan
Latvia
Lebanon
Liechtenstein *
Lithuania
Luxembourg
Malta
Moldova *
Netherlands
Norway
Poland, Republic of
Portugal **
Romania
Russian Federation **
San Marino *
Slovenia
Spain **
Sweden
Switzerland ***
Syrian Arab Republic
Turkey
Ukraine
United Kingdom of Great Britain and Northern Ireland **
Yugoslavia

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* not a member of WMO

** France = Region I, III, IV and VI
Portugal = Region I, II, V and VI
Spain = Region I and VI
Russian Federation = Region II and VI
UK = Region I, V and VI

*** not a member of the UN

N.B. the following are territories or groups of territories, on behalf of which the WMO Convention was applied by the State mentioned under Articles 3 (d) or 3(e) of the Convention.

Hong Kong	- United Kingdom of Great Britain and Northern Ireland
French Polynesia	- France
New Caledonia	- France
Netherlands Antilles	- Netherlands
British Caribbean Territories	- United Kingdom of Great Britain and Northern Ireland

STATUS OF THE IPCC TRUST FUND AS OF 15 OCTOBER 1992,
A PROBABLE IPCC BUDGET ESTIMATE FOR 1993
AND SECRETARIAT SUPPORT

1. Introduction

1.1 This document includes a status report on the joint WMO/UNEP IPCC Trust Fund as of 15 October 1992, a probable budget estimate for 1993 and a request for additional staffing in the IPCC Secretariat.

1.2 All figures cited are in Swiss Francs (CHF), unless stated otherwise.

2. 1992 Receipts as of 15 October 1992

TABLE I

Contributor	Amount in CHF
1991 Cash carry-over	921,538 (1)
Australia	104,830 (2)
Austria	6,300 (3)
Canada	143,206 (4)
France	78,320 (5)
Germany	71,500 (6)
Netherlands	68,428 (7)
Norway	47,055 (8)
Sweden	39,940 (9)
Switzerland	20,000 (10)
UK	107,455 (11)
USA	619,442 (12)
CEC	141,041 (13)
UNEP	125,000
WMO	125,000
TOTAL	2,619,055

(1) Includes unspent obligations for 1991. The full 1992 contributions of Japan (74,575) the Netherlands (77,542) and Switzerland (55,000) and partial 1992 contributions of the UK (£ 60,000 for the Working Group I session in Guangzhou in January 1992) and of the USA (CHF 162,381, see also footnote 12 below) received in 1991 included here. Finland provided the full support in kind and cash, not via

the IPCC Trust Fund, for the AFOS Joensuu Workshop (May 1992).

(2) *1992 contribution of 68,770 (A$ 60,000) for the participation of the developing countries, particularly the small island states;
*in addition: 10,684 (A$10,000) for CZMS Margarita Island Workshop; 9,840 (A$ 10,000) for the Berkeley Workshop; 11,232 (A$ 10,000) towards the publication of the IPCC 1992 Supplement and the 1990 Overview; 4,304 (A$ 4000) for the AFOS Canberra Workshop (this is over and above the support provided in kind and cash, not passed through the IPCC Trust Fund, for the Workshop); the supporting material underlying the impacts component of the 1992 IPCC Supplement was also published by Australia.

(3) Towards the publication of the 1992 IPCC Supplement and the 1990 Overview.

(4) *1992 contribution;
*in addition, Canada translated the Report of the IPCC Workshop on Country Studies (Berkeley, 14-16 September 1992) into French and contributed, not via the IPCC Trust Fund, to and coordinated the publication of the 1992 IPCC Supplement and the 1990 Overview.

(5) *1991 contribution of 51,400 (F 200,000) received in 1992;
*1992 contribution of 26,920 (F 100,000) for the participation of the developing countries, particularly those that are French-speaking.

(6) *For the AFOS Canberra Workshop;
*in addition, DM 180,000, DM 10,000 and DM 20,000 pledged respectively for 1992 contribution, for the publication of the 1992 IPCC Supplement and the 1990 Overview and for the Berkeley Workshop.

(7) *For the CZMS Margarita Island Workshop (see also footnote 1 above).
*in addition, $ 50,000, $ 50,000 and $ 6,000 pledged respectively for the participation of the developing countries, the Berkeley Workshop and for the publication of the 1992 IPCC Supplement and the 1990 Overview; further contributions in kind such as for the workshop on methane and nitrous oxide planned for February 1993, improvement of methodology for assessing methane emissions and comparison of available national data.

(8) 1992 contribution.

(9) *1992 contribution 39,940;
*in addition, 20,000 for the IPCC/OECD joint work on the development of the methodology for inventories of national sources and sinks of greenhouse gases (not included here, see section 5 below).

(10) *20,000 for the Berkeley Workshop (see also footnote 1 above);
*in addition, 100,000 for the IPCC/OECD joint work on the development of the methodology for inventories of national sources and sinks of greenhouse gases (not included here, see section 5 below).

(11) *1992 contribution 77,158 (£ 30,000) (see also footnote 1 above);
*in addition: 5,346 (£ 3,960) for the CZMS Margarita Island Workshop; 24,951 (£ 10,000) for the Berkeley Workshop; £ 10,000, not via the IPCC Trust Fund, for the training and intercomparison workshops on net emissions inventories methodology; £ 6,000, not via the IPCC Trust Fund, for the Woods Hole Workshop on Biotic Feedbacks (October 1992).

(12) *1992 contribution 283,147 (see also footnote 1 above);
*in addition: 14,900 towards the publication of the 1992 IPCC Supplement and the 1990 Overview; 158,400 for Berkeley Workshop on Country Studies; 70,360 for the CZMS Margarita Island Workshop; 80,016 for the AFOS Canberra Workshop; 70,000 and 105,000 respectively for the fifth (Geneva, 1-2 November 1991) and the sixth (Geneva, 5-7 February 1992) sessions of Working Group III;
*further $ 97,000 pledged for 1992; $ 70,000 likely contribution to the Woods Hole Workshop on Biotic Feedbacks (October 1992);
(CHF 162,381 for 1992 received in 1991; other contributions for 1992 received in this order: CHF 112,576; $ 100,000; $ 10,000; $ 120,000; $ 34,000; $ 30,000; $ 80,100).

(13) *1991 contribution 72,000 (ECU 40,000) received in 1992;
*1992 contribution 69,041 (ECU 40,000);
*further ECU 10,000 for 1991 and ECU 10,000 for 1992 pledged.

3. **Expenditures and obligations as of 15 October 1992**

TABLE II

Object of Expenditure (1)	Amount in CHF
Support to developing countries (54.6%)	**1,630,647** (2)
IPCC Secretariat:	
Staff	486,965 (3)
Travel	89,361 (4)
Overhead costs	71,264
Subtotal (21.7%)	**647,590**
Meeting costs:	
Interpretation	438,222
Translation	58,532
Printing & photocopying	88,435 (5)
Miscellaneous	123,849 (6)
Subtotal (23.7%)	**709,038**
TOTAL	2,987,275

(1) Includes unexpended obligations as of 15 October 1992 and all earmarked contributions (such as those for the travel support of the experts from the developing countries).

(2) Includes travel support for the participants from the developing countries and, since August 1992, from countries with economies in transition. Includes support through 15 November 1992, i.e., to the end of the eighth session of the IPCC (Harare, 11-13 November 1992).

(3) The person-year costs of the IPCC Secretary and the Senior Programme Officer in the IPCC Secretariat are borne respectively by the WMO and UNEP. Otherwise, the IPCC Secretariat has an administrative assistant on a one-year fixed term contract and two secretarial/clerical assistants both on 6 month contracts. The amount shown includes the cost for the administrative assistant (through September 1993) and the two secretarial/clerical assistants (through April 1993). Includes also hiring of temporary staff during meetings.

(4) Includes travel to Harare for the IPCC Meetings (9-13 November 1992).

(5) Includes contributions of Australia (11,232), Austria (6,300) and USA (14,900) and the pledge of Germany (DM 10,000), passed or to be passed through the IPCC Trust Fund, for the publication of the 1992 IPCC Supplement and the 1990 Overview.

(6) Includes 40,350 in lump sum grants to host (developing) countries, rental of equipment/vehicles, supplies and hospitality.

4. IPCC Trust Fund as of 15 October 1992

From the data given in sections 2 and 3 above, it may be seen that the IPCC Trust Fund has a current deficit of CHF 368,220. When the pledges from Germany (DM 210,000 or about CHF 189,000), the Netherlands ($ 106,000 or about CHF 133,000), the USA ($ 97,000 or about CHF 122,000) and the CEC (ECU 10,000 for 1991 or about CHF 17,000) are received for a total of about CHF 461,000, the Trust Fund will have a current surplus of about CHF 93,000.

5. Contributions for the development and application of the IPCC/OECD methodology for inventories of national sources and sinks of greenhouse gases

Switzerland and Sweden have contributed CHF 100,000 and CHF 20,000 respectively (see footnotes 9 and 10 to table I) towards the development and application of the IPCC/OECD methodology for net emissions inventory. This was in response to a letter from the IPCC Chairman on behalf of the Environment Directorate of the OECD and IPCC Working Group I. An amount totalling CHF 78,235 has been sent to the WG I office in Bracknell (£ 12,150) and the Environment Directorate of the OECD ($ 40,000). These amounts are not included either in the receipts (section 2) or in the expenditures/obligations (section 3).

6. Budget estimate for 1993-95

A report giving two examples of the IPCC budget for 1993-95 was submitted to the fifth session of the IPCC Bureau in August 1992 (BUR/V/INF.1 - see the appendix for a copy).

7. Probable budget estimate for 1993

7.1 The cost estimate for the meetings and the expenses of the IPCC Secretariat given in paragraph 6 of BUR/V/INF.1 is taken to be the basis for the probable budget estimate for the year 1993. The underlying assumption is that the revised proposal of the Chairman (IPCC/TF/3rd/Doc.2) will be adopted, without major modification, for the structure of the IPCC. The publication and public information activities costs are in addition to this estimate, as already pointed out in the paragraph.

Schedule of meetings in 1993

7.2 The number of IPCC meetings for 1993 shown in BUR/V/INF.1, para 6 could be revised as shown in Table III in the light of the developments since August 1992.

TABLE III

	1993
Panel	3P
Bureau	3
Group I (SCI)	1P 1W 2W 3W 1W 1W
Group II (IMP+RES)	1PW 4PW
Group III (EMSC+ECO)	1P 4W

Explanatory Note:

1. Numbers in the second column denote the quarters. P stands for a plenary session. W indicates a workshop-type meeting. PW indicates meetings where the plenary session of the Group is combined with the meetings of its subgroups; PW-type meetings may require more than 3 days.

2. The Group I plans, except for 1P, follow the draft timetable developed by the current Working Group I for 1993. Two of the "1W" workshops are regional (S. America and English-speaking Africa), for the development/application of the methodology for inventorying national sources and sinks of greenhouse gases. The regional-type workshops would have no more than one or two working languages and would need to support only the experts from the developing countries in the region; the cost estimate for a 3-day, 2-language session with 25 developing countries participating is CHF 204,000.

3. The Panel and the Bureau each may need to meet only once in 1993. (The new Working Group II, if agreed upon with 4 Subgroups, may wish to meet twice; it may wish to follow the practice of the current Working Group III, with its subgroups meeting back-to-back with its sessions in a PW-type meeting.)

Cost factors for the 1993 schedule of meetings

7.3 The cost factors are taken from BUR/V/INF.1 unless otherwise stated.

Panel meeting.....	495,000
Bureau meeting.....	42,000
P-type meetings of the Working Groups	495,000
W-type meetings of the Working Groups	315,000
PW-type meetings (5 days, full interpretation, translation, normal mailing, temporary staff, hospitality, 60 developing countries).....	603,000
Regional type workshops (from para 7.2)	204,000
Fixed annual Secretariat costs	400,000.

Probable budget estimate for 1993

7.4 Assuming the meeting schedule given in paragraph 7.2 and using the data in paragraph 7.3 above, the estimated expenditures in 1993 amount to CHF 4,801,000. This estimate may be compared with the amount for 1993 that can be worked out from para 6 of BUR/V/INF.1, namely, CHF 5,164,000. The donors may not wish to route all their contributions through the IPCC Trust Fund.

Publication costs

7.5 Five thousand copies of a 200-page report is estimated to cost CHF 50,000. Distribution charges would be in addition to this cost. Colour plates, if any, would increase the cost by an additional CHF 3000 per plate. This cost is not included in the probable budget estimate for 1993 (paragraph 7.4).

8. Cash flow

It is important that remittances be received in the IPCC Trust Fund in time. This would imply, at a minimum, that the funds for a given quarter's activities are received no later than the beginning of the previous quarter. In the same manner, the funds for the annual IPCC Secretariat expenses for a given year need to be received no later than September of the previous year.

9. Request for additional staffing for the IPCC Secretariat

9.1 The IPCC Secretariat, as stated elsewhere in this document, consists of the IPCC Secretary, a Senior Programme Officer, an administrative assistant and 2 secretarial/clerical assistants. The Panel has in the recent past increased its practice of holding meetings back-to-back. This has had the very salutary effect of optimizing the cost while steadily improving the participation of the developing countries (and now of the countries with economies in transition) but increases disproportionately the workload of the IPCC Secretariat during the meetings. Also, the IPCC Secretariat, not surprisingly, lacks depth in many technical areas.

9.2 The IPCC Secretariat would welcome additional staffing and makes the following proposal for the purpose.

a. Governments could be requested to second officers to the IPCC Secretariat to help with technical matters as well as during the IPCC meetings.
b. Governments from the developed and the other parts of the world could be invited to second such officers. Officers from the developing countries could be paired with officers from the developed countries.
c. These officers will not physically move to Geneva. They will stay in their positions with their governments and will only devote the time needed to assist the IPCC Secretariat.
d. The officers would "network" with the IPCC Secretariat through faxes, modems etc.
e. The officers would travel as necessary to the IPCC Secretariat and/or to the relevant IPCC meetings. This, however, would require a additional budgetary resources.

Such an arrangement would avoid bureaucracy-building and would contribute in a small way to capacity-building.

APPENDIX H

LIST OF PARTICIPANTS

(Distributed during the eighth session of IPCC
and not attached here in order to save bulk.
The list is available upon request
from the IPCC Secretariat)