

WORLD CLIMATE PROGRAMME PUBLICATIONS SERIES

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# WMO/UNEP INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

REPORT OF THE FIRST SESSION

OF THE

WMO/UNEP INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)

Geneva, 9 - 11 November 1988

IPCC - 1

TD - No. 267



World Meteorological  
Organization



United Nations Environment  
Programme

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Atnc  
CL/104  
1st sess.

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1. ORGANIZATION OF THE SESSION (agenda item 1)

1.1 Opening of the Session (agenda item 1.1)

1.1.1 The first session of the Intergovernmental Panel on Climate Change was held at the Geneva International Conference Centre (CICG) from 9 to 11 November 1988. It was formally opened at 10.15 am on 9 November by Mr. J.P. Bruce, Acting Deputy Secretary-General of the World Meteorological Organization (WMO).

1.1.2 Professor G.O.P. Obasi, Secretary-General of WMO, in his opening address, welcomed the delegates and emphasized the great importance attached by WMO to the work of this new Intergovernmental Panel on Climate Change (IPCC). He welcomed and paid a warm tribute to Dr. Mostafa K. Tolba, Executive Director of the United Nations Environment Programme (UNEP), for his successful efforts with regard to the Vienna Convention on the Ozone Layer and its associated Montreal Protocol.

The Secretary-General stressed that the predicted global warming is one of the most important long-term challenges facing humanity. He referred to the enormous outburst of public concern over global warming and the related sea level rise, the discussions in the UN General Assembly on the draft resolution by Malta on climate change and the attention by heads of state and the media.

He emphasized the scientific nature of the Organization's work in assisting 160 Member countries in measuring, standardizing, collecting and disseminating climate and other atmospheric data. He pointed out that scientific investigations have been carried out under the World Climate Programme in its four components : data, applications, research and impact studies. The Programme is being carried out in a co-ordinated manner between WMO, UNEP, ICSU and UNESCO.

At the same time, WMO cannot be a bystander in considering the consequences of the scientific studies. It has, together with UNEP, formed IPCC and convened its first session.

Cautioning the Panel members that their task spans many disciplines and demands much iterative work between science and public policy, Prof. Obasi urged them to bring together their differing expertise and backgrounds in a co-operative, productive manner. He pointed out that there is the suggestion of an agenda for the Panel's work for the next year and a half in the draft resolution by Malta on climate change.

He noted that in our search for policy responses to global warming we must continue to support and strengthen the measurement and research programmes to reduce the uncertainties in scientific understanding. One especially important task is to strengthen work on climate and air quality in the developing countries of the world so that they become full partners in the search for appropriate solutions.

Finally, he pledged the full support of WMO to the efforts of the Panel.

1.1.3 Dr. Mostafa K. Tolba, the Executive Director of UNEP, welcoming participants to the first session of IPCC, thanked governments for designating eminent representatives to the Panel, pointing out that their calibre was evidence of the significance attached to the challenge of climate change by governments. He expressed pleasure at sharing the platform with Prof. Obasi, the Secretary General of WMO, whose personal effort in their joint endeavour to gear WMO and UNEP towards assisting the international community to deal with the challenge of climate change, he held in high esteem.

Hailing the formation and launching of IPCC as a milestone in global co-operation for environmental protection, Dr. Tolba expressed satisfaction at the extent of concern shown by political leaders and policy makers to the threat posed by climate change. Such concern, he continued, has been expressed in public statements by Heads of Government, and in various fora, including the UN General Assembly.

In giving the background information leading to the formation of IPCC, and the terms of reference for the Panel as suggested by the WMO Executive Council and the UNEP Governing Council, Dr. Tolba requested the Panel to address those knowledge gaps as they relate to the science, impacts and policy responses associated with the climate change problem. He stressed that the Panel should, as a first step, identify the agreed facts and projections, separate them from mere speculations and bravely inform the world what ought to be done. Dr. Tolba urged the Panel to take account of work which has already been carried out by governments and international organizations in the field of climate change.

Dr. Tolba informed IPCC that the work of the Panel should constitute a firm basis for the deliberations of the Second World Climate Conference. In this connection, he appealed to his colleague, Prof. Obasi, together with the WMO governing bodies, to consider postponing the Conference to the end of 1990.

Commenting on the most promising approach to the work of the Panel, Dr. Tolba suggested the establishment of three Working Groups to deal with scientific assessment, socio-economic impacts and policy responses. He also proposed the creation of a small Bureau to co-ordinate the work of the Panel.

Dr. Tolba concluded by reminding the delegates that there are about 4,000 days left in this century. He urged that the period between now and the end of the century be used for global co-operation to contain and cope with the profound evolution we are imposing on our environment.

1.1.4 The list of participants is contained in Annex I.

1.1.5 Prof. B. Bolin of Sweden was elected Chairman of the session by acclamation. Dr. Abdul Bar Bin Abdullah Algain of Saudi Arabia and Mr. K. R. Rufai of Nigeria were elected Vice-Chairman and Rapporteur of the session, respectively, also by acclamation.

1.1.6 The Panel established a Nominations Committee for the choice of the Chairman, Vice-Chairman and the Rapporteur of the Panel. The Nominations Committee consisted of the following :

Australia (Chairman)  
Malta  
Mexico  
Senegal  
USA  
USSR

and representatives of WMO and UNEP.

1.2 Approval of the agenda (agenda item 1.2)

1.2.1 The provisional agenda was adopted without any change. The agenda of the session is given in Annex II.

1.3 Programme of work of the session (agenda item 1.3)

1.3.1 The Panel agreed on the working hours of the meetings and decided that the various items would be considered in the order given in the agenda.

2. NATIONAL STATEMENTS (agenda item 2)

2.1 Statements concerning national views, policies and activities relating to the climate change issue were made by representatives of the following Member countries :

- Australia
- Canada
- China
- Finland
- India
- Japan
- Kenya
- Malta
- Mexico
- Netherlands
- Norway
- Senegal
- Sweden
- Switzerland
- USSR
- UK
- USA
- Zimbabwe.

In their statements, Members expressed support to the joint efforts of WMO and UNEP in establishing IPCC. The Commission of the European Communities expressed a similar sentiment.

Short summaries of the statements provided by the delegations are given in Annex III.

3. DISCUSSION OF THE PANEL'S PROGRAMME OF WORK (agenda item 3)

3.1 The Panel considered the organization of its work, from the viewpoint of both structure and schedule, to attain the objectives set up by the governing bodies of WMO and UNEP, summarized in the WMO Executive Council Resolution 4 (EC-XL) :

- "(i) Assessing the scientific information that is related to the various components of the climate change issue, such as emissions of major greenhouse gases and modification of the Earth's radiation balance resulting therefrom, and that needed to enable the environmental and socio-economic consequences of climate change to be evaluated;
- (ii) Formulating realistic response strategies for the management of the climate change issue."

3.2 The Panel agreed that its work included three main tasks :

- (i) Assessment of available scientific information on climate change;
- (ii) Assessment of environmental and socio-economic impacts of climate change;
- (iii) Formulation of response strategies.

3.3 The Panel decided to establish three Working Groups to accomplish these tasks in the most efficient and expeditious manner. Each Working Group should deal with its assigned task while close co-ordination of their activities should be ensured. It was specifically pointed out that the activity of the Working Group on response strategies would heavily depend on the results obtained by the other Working Groups. Nevertheless, the three Working Groups should start their work immediately. All three Working Groups should take into consideration, in their work, available assessment results obtained by relevant international and national bodies and programmes, including the World Climate Programme.

3.4 The Panel agreed upon the terms of reference for the Working Groups. These are appended as Annex IV to this report.

3.5 The Panel agreed that it would designate a Chairman, and Vice-chairmen, as needed, for each of the Working Groups. In doing so, the need for an equitable regional representation and balance of scientific and management expertise would be taken into account.

3.6 With regard to the membership of the Working Groups, the Panel considered that while participation by all countries interested in the activity of a Working Group would be essential to achieve a comprehensive and balanced outcome of its work, there is a need to provide for a manageable and effective group composition.

3.7 Therefore it was agreed that a core membership would be established for each Working Group. Working Groups I, II and III would have thirteen, thirteen and seventeen core members respectively. However, this would not imply that other interested countries would not be welcome to join in a Group's activity. The Panel suggested that, on the contrary, each Working Group should strive to obtain the best possible expertise, on a worldwide basis, particularly to cover the regional aspects adequately. The Panel further suggested that any country interested in the work of a particular Working Group should be invited to designate a focal point for purposes of communication and to attend sessions of the Working Group, if desired. The core members would be responsible for the completion of the tasks of the Working Groups in a timely manner.

3.8 The Panel emphasized that participation, as observers, of experts from relevant international organizations, such as ICSU, UNDP, UNESCO, FAO, CMEA, OECD/IEA, GCC and ECE, in the Working Groups and the Panel is essential and hence should be ensured in a timely fashion. The Panel recognized that IUCN and other non-governmental organizations (NGO's) can make important contributions to the work of IPCC and agreed to ensure their participation, as observers, in the work of the Panel and its Working Groups. The Panel also recognized that there are other organizations, particularly regional economic integration organizations, which are contracting parties to relevant international conventions, and that the participation of such organizations is essential for the work of the Panel and its Working Groups.

3.9 The Nominations Committee (see para 1.1.6 above) was requested by the Panel to recommend the core membership of the Working Groups. The Committee, as stated by its Chairman in his remarks, took into account geographical distribution and available expertise in arriving at the recommendations. With regard to Working Group I, the importance of scientific credibility was stressed and with regard to Working Group III, the large number of nominees and areas to be covered led to the need for five Vice-Chairmen. The other two Working Groups would have two Vice-Chairmen each.

3.10 After a few amendments, the core composition of the Working Groups, as appearing in Annex V, was approved by IPCC. It may be noted that Working Group II does not have its full complement of core members.

3.11 The Panel was aware of the need to co-ordinate the work of the three Working Groups and the activities of the Panel in the intersessional periods. For this purpose, it was decided to establish a Bureau of IPCC, consisting of fifteen persons :

- (i) Chairman of the Panel;
- (ii) Vice-Chairman and Rapporteur of the Panel;
- (iii) Chairmen of the three Working Groups; and

- (iv) Vice-Chairmen of the three Working Groups (two each for Working Groups I and II and five for Working Group III).

It was understood that, to provide for the best possible co-ordination, the Chairmen and Vice-Chairmen of the Working Groups should be, where possible, Principal Delegates of their respective countries in IPCC.

3.12 The Bureau will review the outlines of reports to be prepared by the Working Groups and will report to the next session of IPCC on the matter. On completion of the reports, the Bureau will integrate them into a single assessment statement which will include an executive summary, designed to facilitate the requirements of political analysts. This will include recommendations on co-ordinated international action(s). The Panel agreed that such a statement could also serve other useful purposes (see para 4.1 below).

3.13 The Working groups met at 2:00 pm on Friday, 11 November 1988. They decided to have their first full meetings as follows :

- (a) Working Group I, 24-26 January 1989 in the United Kingdom. The exact place will be notified later;
- (b) Working Group II, before the meeting of the Bureau (see para 4.3 below). The exact dates and place will be notified later.
- (c) Working Group III, tentatively, 30-31 January 1989 in Washington D.C. The dates and place will be confirmed.

3.14 In considering its own membership, the Panel recalled that at the beginning of 1988 all members of the UN were informed of the intended establishment, in accordance with the decisions of the WMO and UNEP governing bodies, of the Intergovernmental Panel on Climate Change. During the preparation for the first session of the Panel, it became evident that many countries were anxious to participate. The Panel viewed this as a very encouraging factor in accomplishing its tasks successfully. It was agreed that although only a select number of countries could take part in the first session, this should by no means suggest that other countries would be excluded from participation in the Panel's activities.

3.15 On a related matter, the Panel recommended that accurate ongoing climate monitoring under existing activities of the World Weather Watch (WWW), Integrated Global Oceans Services System (IGOSS) and the World Climate Data Programme (WCDP) should be given high priority by all members of the World Meteorological Organization and/or the Intergovernmental Oceanographic Commission, as the case may be.

3.16 Equally importantly, more research is needed in order to lay a good scientific foundation for future reference. Thus, IPCC recommended that nations continue and strengthen their support for such programmes as the World Climate Research Programme and the International Geosphere-Biosphere Programme.

4. SCHEDULE OF WORK OF IPCC (agenda item 4)

4.1 The Panel was informed of various international activities, including several high-level meetings, for which findings and recommendations of the Panel would be very valuable inputs. In particular, the Panel was informed of a draft resolution "Conservation of Climate as part of the Common Heritage of Mankind", submitted by Malta to the 43rd Session of the UN General Assembly. The draft resolution called for a report on the climate change issue to be prepared by the Secretary-General of WMO and the Executive Director of UNEP, together with IPCC, if possible within 18 months, for consideration at the 45th Session (1990) of the General Assembly. It was pointed out that such a report, if completed in time, could also be submitted to the 11th World Meteorological Congress in May 1991, the UNEP Governing Council in 1991 and the Second World Climate Conference (see para 4.2 below). The statement to be prepared by the Panel (see para 3.12 above), together with available reports of the Working Groups, could serve these purposes.

4.2 The Panel considered its work schedule in relation to the timetable for the Second World Climate Conference, scheduled to be held from 25 June-3 July 1990. The Panel recognized that these dates were set up by the WMO Executive Council after careful consideration of the recommendations of the Organizing Committee for the Conference. Several Members expressed the view that a postponement of the Second World Climate Conference by a few months (say, until October-November 1990) could allow, on the one hand, the Conference to benefit from the results of the Panel's work and, on the other hand, the Panel to present a well-prepared report to such an important forum. Some other Members were, however, of the view that the dates of the Conference established by the WMO Executive Council should be adhered to.

4.3 On the basis of the above considerations, the Panel adopted the following work schedule :

- (i) Immediate activation of its Working Groups (see also agenda item 3, particularly para 3.13); each Working Group should make its plans for its meetings, keeping in mind the work schedule of the Panel and the Bureau;
- (ii) The first meeting of the Bureau, 6-7 February 1989, in Geneva, Switzerland, for the purposes of reviewing and approving the outline submissions of the Working Groups (see Annex IV);
- (iii) The Second Session of the Panel, 28-30 June 1989 in Nairobi, Kenya, to be hosted by UNEP;
- (iv) A meeting of the Bureau, possibly in late 1989 or early 1990;
- (v) A Session of the Panel in September-October 1990, to consider the reports of its Working Groups and prepare an assessment statement (see para 3.12 above) for submission to WMO and UNEP.

5. THE SECOND WORLD CLIMATE CONFERENCE (agenda item 5)

The Panel was informed of the suggestion of the Organizing Committee for SWCC that it should be requested to advise in the identification of experts who could contribute to the conference by arranging for extensive presentations of national policies and programmes related to climate change and the application of knowledge of climate and its impacts in various socio-economic sectors. The Panel referred this matter to its corresponding Working Groups to make proposals with a view to meeting the above request (see also paras 4.1 and 4.2 above).

6. FINANCIAL QUESTIONS (agenda item 6)

6.1 The WMO representative, Mr. J.P. Bruce, in introducing the subject matter, stated that the two sponsoring organizations, WMO and UNEP, had no provision within their current regular budgets for supporting the activities of the Panel. He suggested the establishment of a Trust Fund for the purpose, to which he invited contributions from the Members.

6.2 A number of delegations supported the idea of a Trust Fund. However, many felt that this should be an interim measure and that the work of the Panel should begin to be financed from the regular budgets of both WMO and UNEP at the time of their next budgetary considerations.

6.3 To assist the work of the Panel, several countries generously offered financial contributions to the Trust Fund, some stating that their contributions could be used to support the participation of representatives and experts from the developing countries in the Panel and the Working Groups. Other countries pledged support and indicated that they would communicate the actual figures later. The Panel also welcomed indications that countries and international and regional organizations intend to provide support in kind, in particular by supporting the participation of their experts in the Working Group's activities. The Panel agreed that the participation of developing countries in all its activities was vital and appealed for further support for such participation.

6.4 On staffing, one delegate suggested that the Secretariat of IPCC be strengthened by the addition of a staff member with expertise in policy issues.

6.5 The Panel particularly noted that UNDP, with its financial resources and its global network of offices, plays a vital role in the environmental issues of concern to the Panel. Noting also the unique and important co-ordinating and financing role that UNDP plays in the context of country and regional programming, the Panel urged UNDP and the technical agencies concerned to support increasingly efforts that will address the urgent environmental aspects of such programmes at the design and approval stage. The Panel also recognized the vital role that could be played by the World Bank and other multilateral development financing institutions, particularly as far as preventive and adaptive responses to climate change were concerned.

7. ELECTION OF THE CHAIRMAN, VICE-CHAIRMAN AND RAPPORTEUR OF THE PANEL  
(agenda item 7)

7.1 It was understood that should the Chairman leave office for any reason, IPCC will elect a new Chairman.

7.2 On the recommendation of the Nominations Committee, IPCC unanimously elected Prof. B. Bolin, Dr. Abdul Bar Bin Abdullah Algain and Mr. K.R. Rufai as Chairman, Vice-Chairman and Rapporteur of the Panel, respectively.

7.3 The Committee approved the duties and terms of office of the Chairman, Vice-Chairman and Rapporteur as given in Annex VI.

8. OTHER MATTERS (agenda item 8)

No issue was raised under this item.

9. DATE AND PLACE OF THE NEXT SESSION OF IPCC (agenda item 9)

IPCC agreed that its second session would be held in Nairobi, Kenya, from 28-30 June 1989. UNEP will host this session.

10. CLOSURE OF THE SESSION (agenda item 10)

The first session of IPCC closed at 4.20 pm on Friday, 11 November 1988.

LIST OF PARTICIPANTS1. OFFICERS OF THE SESSION

B. Bolin	chairman
A. Algain	vice-chairman
K. Rufai	rapporteur

2. REPRESENTATIVES OF MEMBER STATES

<u>Member State</u>	<u>Name</u>	<u>Capacity</u>
Algeria	M.K. Mostefa-Kara	principal delegate
Argentina	Ms A. Moglia	principal delegate
Australia	W.J. McGregor Tegart J.W. Zillman M.P.F. Smith A. Garran	principal delegate alternate adviser adviser
Brazil	W.P. Moreira	delegate
Canada	H.L. Ferguson B. Emmett G. McBean J.D. McTaggart-Gowan J.G. Côté A.C. de Hoog A. Kessel J.C. Sloan	principal delegate delegate delegate delegate adviser adviser adviser adviser
China	Luo Jibin	principal delegate
Denmark	L.P. Prahm	principal delegate
Finland	E. Jatila K.O. Kouriletho Ms A. Vuorinen	principal delegate delegate delegate
France	J.C. Oppeneau D. Cariolle Ms D. Martin-Ferrari H. Ladsous	principal delegate delegate delegate delegate

German Democratic Republic	R. Fretter	principal delegate
Germany, Federal Republic of	H. Grassl M. Fernau	principal delegate delegate
India	A.C. Ray S.A. Subbaiah	principal delegate delegate
Israel	S. Jaffe	principal delegate
Italy	M. Conte	principal delegate
Japan	Y. Hatano K. Hasegawa M. Komabayashi M. Hyodo M. Watanabe H. Tsujimoto M. Uwasawa H. Kobayashi K. Kobayashi M. Shiota K. Fukuyama	principal delegate alternate delegate delegate delegate delegate delegate delegate delegate delegate delegate
Kenya	S.J.M. Njoroge M.O. Kinyanjui	principal delegate delegate
Malta	D. Attard H. Taylor-East	principal delegate delegate
Mexico	J. Adem T. Adem	principal delegate alternate
Netherlands	C.J.E. Schuurmans W. Kakebeeke P. Vellinga T. Schneider	principal delegate alternate delegate adviser
New Zealand	R. Smith	principal delegate
Nigeria	K. Rufai	principal delegate

Norway	P. Bakken A. Grammeltvedt O. Hov	principal delegate delegate delegate
Saudi Arabia	A. Algain	principal delegate
Senegal	A. Sene M. Seck	principal delegate alternate
Sweden	B. Bolin	principal delegate
Switzerland	H. Oeschger A. Clerc Ms P. Francis-Morand	principal delegate delegate adviser
Union of Soviet Socialist Republics	A.P. Metalnikov S.S. Hodkin E. Konigin V. Blatov B. Smirnov	principal delegate delegate delegate adviser adviser
United Kingdom	J.T. Houghton D. Fisk M. Dalton Ms S. Mann	principal delegate alternate adviser adviser
United States of America	F.M. Bernthal J. Clarke Ms L. Fisher E.W. Friday W. Nitze E Bierly E. Black G. Cartwright I. Goklany A. Hecht M. Kelly R. Morgernstern Ms A. Patterson R. Watson E. Williams	principal delegate alternate alternate alternate alternate adviser adviser adviser adviser adviser adviser adviser adviser adviser adviser adviser
Zimbabwe	Ms R.P. Karimanzira P. Chali	principal delegate

3. REPRESENTATIVES OF THE WORLD METEOROLOGICAL ORGANIZATION

G.O.P. Obasi	Secretary-General
J.P. Bruce	
V. Boldirev	
I. Tolgyesi	

4. REPRESENTATIVES OF THE UNITED NATIONS ENVIRONMENT PROGRAMME

M.K. Tolba	Executive Director
P. Usher	
A. Diamantidis	
B. Ekblom	

5. EXPERTS

J.C.I. Dooge	WMO/UNEP Adviser
W. Degefu	President, WMO Regional Association I (Africa)
J. Kastelein	President, WMO Commission for Aeronautical Meteorology (CAeM)
A. Kassab	President, WMO Commission for Agricultural Meteorology (CAgM)
F. Mesinger	President, WMO Commission for Atmospheric Sciences (CAS)
A.A. Vasiliev	President, WMO Commission for Basic Systems (CBS)
J.L. Rasmussen	President, WMO Commission for Climatology (CCl)
S.P. Huovila	President, WMO Commission for Instruments and Methods of Observation (CIMO)

6. REPRESENTATIVES OF INTERNATIONAL ORGANIZATIONS

E. Ciszak	Economic Commission for Europe (ECE)
E. Youkel	United Nations Development Programme (UNDP)
L. Hyttinen	
D. Norse	Food and Agriculture Organization of the United Nations (FAO)
M. Ruivo	United Nations Educational, Scientific and Cultural Organization (Unesco)

M. Ruivo	Intergovernmental Oceanographic Commission (IOC)
P.J. Waight	World Health Organization (WHO)
Ms A. Hagen Ms M.S. Opelz	International Atomic Energy Agency (IAEA)
Ph. Bourdeau R. Fantechi S. Johnson P. Steif-Tauch	Commission of the European Communities (CEC)
P. Arjoon	Commonwealth Secretariat
F.W.G. Baker	International Council of Scientific Unions (ICSU)
R. Shaw	International Institute for Applied Systems Analysis (IIASA)
S. Hope	International Petroleum Industry Environmental Conservation Association (IPIECA)
G. Dorin Ms C. Smyser	Organization for Economic Co-operation and Development (OECD)
J. Shiller	Organisation internationale des constructeurs d'automobiles (OICA)
Ms G.K. Ramothwa	Southern African Development Coordination Conference (SADCC)
R. Pomerance	World Resources Institute (WRI)

7. IPCC SECRETARIAT

N. Sundararaman	Secretary, IPCC
S. Tewungwa	UNEP member



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INTERGOVERNMENTAL PANEL  
ON CLIMATE CHANGE  
FIRST SESSION

GENEVA, 9-11 NOVEMBER 1988

Distr.: Restricted

IPCC-I/Doc. 1

(1.X.1988)

Item: 1.2

Original: ENGLISH

AGENDA

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  - 1.1 Opening of the Session
  - 1.2 Approval of the Agenda
  - 1.3 Programme of Work of the Session
2. NATIONAL STATEMENTS
3. DISCUSSION OF THE PANEL'S PROGRAMME OF WORK
  - 3.1 Assessment of available scientific information on climate warming.
  - 3.2 Assessment of environmental and socio-economic impacts of climate warming.
  - 3.3 Formulation of response strategies.
4. SCHEDULE OF WORK OF IPCC
5. THE SECOND WORLD CLIMATE CONFERENCE
6. FINANCIAL QUESTIONS
7. ELECTION OF CHAIRMAN, VICE-CHAIRMAN AND RAPPORTEUR OF IPCC
  - 7.1 Approval of the duties and terms of office of the Chairman, Vice-Chairman and Rapporteur.
  - 7.2 Election of Chairman, Vice-Chairman and Rapporteur.
8. OTHER MATTERS
9. DATE AND PLACE OF THE NEXT SESSION OF IPCC
10. CLOSURE OF THE SESSION

SUMMARY OF NATIONAL AND ORGANIZATIONAL STATEMENTS

### AUSTRALIA

The Australian Government is conscious of the global significance of the climate change issue and is particularly concerned with the implications of climate change on a regional basis within Australia and on its near neighbours in Asia and the Pacific and Indian Oceans. Australia welcomes the WMO/UNEP Intergovernmental Panel on Climate Change as an appropriate mechanism to take the lead within the UN system in addressing the complex scientific and environmental issues and likely impacts involved. Australia wishes to particularly stress the urgency of co-ordinated international assessment of possible greenhouse-induced variations of climate on a regional basis as an essential pre-requisite for the national impact analysis and planning that will become urgent if major changes in climate are predicted. Thus, while recognizing the essentiality of a wide range of scientific studies at the national level in individual countries, Australia wishes to emphasize the important role of international programmes, such as the World Climate Research Programme, in ensuring that the total scientific resources brought to bear on this problem are used in the most effective way possible. They will provide an international frame of reference for national and regional efforts and facilitate development of international policy responses.

### CANADA

In stressing the importance of IPCC, Canada described the domestic importance of climate change. Canada raised three main issues :

1. The need to focus attention on what is known about climate change. Canada urged IPCC to separate scientific facts from hypotheses, predictions and speculations. It should concentrate on developing precautionary policy options;
2. IPCC should not behave as a new autonomous organization. It should report through the Executive Council of WMO and the UNEP Governing Council. Canada urges IPCC to build upon the framework of the World Climate Programme; and
3. Concerning the organization of work, Canada proposes a working group to assess scientific knowledge, another to review and assess existing work on socio-economic impacts and a third to address policy options. The latter would include questions of limitation, adaptation and further development of international legal principles.

Finally, Canada believes that the Second World Climate Conference (SWCC) is a timely initiative which should be given a high priority. The work of IPCC should constitute a major input to the SWCC.

CHINA

Climate is a global problem. The efforts of several countries are far from sufficient for the prevention of the deterioration of climatic conditions. Therefore, we support the joint efforts of governments of various countries, the United Nations, its specialized agencies and other organizations in the exploration of the problem and of the response strategy. We hold that the Panel should and can play an important and substantial role in this respect. The economic and technological gap between developed and developing countries is a reality which must be taken into account in formulating a response strategy. The Chinese government would like to take an active part in this exploration and try its best to make its due contribution.

FINLAND

The Government of Finland highly appreciates the establishment of IPCC and is willing to support actively its work.

To make a meaningful assessment of climate change, reliable data sets are to be created. This would require increasing observing activities and establishing common data sets to be used in the related research. In order to improve the data coverage, Finland has, during the past few years, donated about US\$ 20 million to the developing countries. Finland has also recently started stratospheric ozone soundings in Finland and before the end of 1988 similar soundings will be commenced in Antarctica as a joint Finnish-Argentine project.

INDIA

India shares with the world community the concern and the alarm about the possibilities of accelerated build-up of carbon dioxide and other greenhouse gases in the atmosphere. Wide-ranging changes in climate would mean changes in monsoon, in economic activities in the entire country, and would have long-ranging effects in the coastal area.

The Intergovernmental Panel on Climate Change should work towards broad global agreements to reduce the threat. Such agreements should contain positive and enforceable clauses in order to ensure that there is a free exchange of scientific and technical information, and technical collaboration between the developed countries and the developing world.

In India, it is the Ministry of Environment and Forests which performs the nodal function and is co-ordinating the efforts to combat such regional or global environmental problems and is eager to collaborate with such institution or committee as would undertake international co-ordination.

India has already launched a big environmental protection programme with afforestation, pollution control and impact assessment of all human activities. India reiterates her commitment to co-operation with all countries in the world to meet the projected environmental crisis resulting from global climatic change.

ISRAEL \*

We had some apocalyptic prophecies concerning the planet Earth, due to the global warming. It might have been influenced by recent summer events of the droughts and furious hurricanes in America, by the extraordinary heatwave in the eastern Mediterranean, etc. But, before we cry "Wolf, wolf", we should have some scientific basis for the cry. Carbon dioxide increased considerably during the last thirty years but our comparison of 1920-50 normals with those of 1950-80 show some cooling and increase of precipitation, which is not in accordance with the global predictions for sub-tropical regions.

We would strongly suggest that the Panel issues an urgent call to all Member State Governments asking them to encourage and support measurements of CO<sub>2</sub>, ozone and ultraviolet radiation and of course temperature, precipitation and evaporation (mainly in the developing countries) and that they initiate research and studies of climate change in the various regions, so that our working groups will have a sound basis of data and studies for their deliberations.

\* This statement was made during the discussion on agenda item 3.

JAPAN

Global environmental problems are the highest priority question confronting the international community, and it is important to unite in taking positive and effective measures. While scientific research on the mechanism of global warming should be intensified, it is essential to begin implementing concrete measures before it is too late. The Japanese Delegation proposes the following directions on global warming :

1. To strengthen and expand the existing monitoring system and to promote international research;
2. To promote the various types of technological development for preventing global warming and for minimizing damages;
3. To take, at the same time, measures on a step-by-step basis.

For such a direction, Japan is prepared to contribute in various fields. Furthermore, Japan will co-operate in every way possible to ensure the effectiveness of the Panel's work.

#### KENYA

Kenya welcomes the establishment of the Intergovernmental Panel on Climate Change (IPCC). It is only through the collective collaboration by the International Community that we can understand our changing climate and formulate appropriate response and adaptive policies. Kenya's economy relies heavily on rain-fed agriculture which is extremely sensitive to climate changes. The delay in the onset of rains, failure of rains or even excessive rain can have adverse effects on food production. In our region, the climate is so harsh that in a short period we get extremes, e.g. a country can suffer the fury of drought in one year while the following year the same country suffers the fury of floods with loss of lives and property. This is now happening in Sudan. We appreciate the quick response by the International Community, by way of food relief, but this Panel should formulate a system of an appropriate early warning system to delay, limit and mitigate the impact of climate changes.

We believe it is the responsibility of this Panel to look into the serious data gaps in Africa and the telecommunications systems. This will help in improving the World Data Base and timely transmission of information. The issue of alternative sources of energy, together with social economic aspects, need attention as they contribute to climate change. Kenya looks to this Panel as a focal point of activities in climate change.

#### MALTA

Prof. D. Attard referred to the Malta initiative on climate at the 43rd Session of the UN General Assembly. At his country's request, an item entitled "The Conservation of Climate as part of the Common Heritage of Mankind" was inscribed in the Assembly's agenda and discussed at a special plenary meeting of the Assembly as well as in the Second Committee.

The Maltese representative outlined Malta's proposals for an immediate and comprehensive global strategy to deal with climate change, particularly global warming. These proposals had been incorporated in a draft resolution (A/C.2/43/L.17, 26 October 1988), which is being considered at the UN and which had been circulated to the Intergovernmental Panel on Climate Change by the Secretary as an annex to IPCC-I/Doc.3 (9.XI.1988). It was, he stressed, paramount that the Panel become the focal point of all international, interdisciplinary efforts on climate change.

The formulation of a framework Convention on the Conservation of Climate was proposed by Prof. Attard. He suggested that the Convention would enunciate general principles and provide a general infra-structure within which national, regional and international measures to conserve climate can be harmonised and co-ordinated. The Convention could be subsequently complemented by a series of protocols which regulate the implementation of specific effective measures.

Whilst Malta foresaw the conclusion of the Convention by the time of the World Climate Conference, which should be held at the end of 1990, the development of the protocols would be a more lengthy process which should evolve on a stage-by-stage basis to ensure widespread and general support.

Prof. Attard proposed the establishment of a Legal Experts Working Group which would be responsible for preparing a report on the international legal principles relating to the conservation of climate and subsequently to make proposals on the constitutive elements of the Convention on the Conservation of Climate.

Malta urged the global community to work together to avoid disturbing the fragile environmental balance upon which life depends. Climate change was a common concern of mankind and required a solidarity of response from all states.

#### MEXICO

The government of Mexico has much interest in participating in the work of the Intergovernmental Panel on Climate Change.

The country I represent has recognized the importance of climatic studies by creating ten years ago the Centre for Atmospheric Sciences at the National Autonomous University of Mexico, where climatic research is carried out. Particularly noteworthy are the numerical experiments using the hemispherical, thermodynamic model of climate, in which a more realistic parameterization of radiation was incorporated recently to adapt it for calculating the greenhouse effect. This model has a different focus from conventional models of the general circulation of the atmosphere in that it simulates and predicts climatic variations.

Experiments are currently being carried out on the greenhouse effect in relation to CO<sub>2</sub>, as well as on the application of the thermodynamic model to forecasting anomalies of temperature and precipitation for one-month periods.

To conclude, I wish to repeat that we hope to participate actively in the work of this Intergovernmental Panel on Climate Change.

THE NETHERLANDS

The Government of the Netherlands welcomes the establishment of the Intergovernmental Panel on Climate Change as a body for global co-ordination of international and national activities in this field. At the time of the First World Climate Conference in 1979, the Netherlands had already installed a Special Committee on the CO<sub>2</sub> issue, to advise the Government on possible consequences. As a result of the Committee's reports, Parliament was informed about the problem and special research funding for CO<sub>2</sub>-related projects was started, especially in regard to a CO<sub>2</sub>-related sea level rise and its societal impact. A model for the assessment of this impact, developed in the Netherlands, has been the subject of a Memorandum of Understanding with UNEP for use in other parts of the world.

Recent developments include the following three major initiatives :

1. The installation of a Climate Committee at the Royal Academy of Arts and Sciences to advise the Government on climate issues, especially in regard to the research needed;
2. The co-ordination and increase of climate research, in a broad sense, among the various institutes, stimulated by the request of the Minister of the Environment on how to accelerate the research; and
3. The organization and hosting of international meetings on ozone depletion and global warming and its impacts. The most important of these is a Ministerial Conference on Atmospheric Pollution and Climate Change, to be held in the Netherlands in the fall of 1989.

The preparations of this Conference, which has been announced by the Minister of the Environment at the Toronto Meeting this summer, are in progress and both UNEP and WMO are participating in the preparations. It is our intention to closely associate the Ministerial Conference with the activities initiated by the Intergovernmental Panel on Climate Change.

NORWAY

Norway is willing to play an active role in IPCC and supports in general the structure of work outlined by Dr. Tolba. Norway will from next year have a national programme of research on climatic change and stratospheric ozone, and a new atmospheric research station on Svalbard will start its operations in 1989. We will also put forward the following elements of an international plan for action on climatic change presented by our prime minister Gro Harlem Brundtland in Toronto in July 1988 :

1. Launching immediate discussions on the feasibility of adopting regional strategies for stabilizing and reducing energy consumption and use, before the end of the century;

2. Establishment of a comprehensive international research and information programme on renewable energy;
3. Establishment of technology transfer, with emphasis on the needs of developing countries.
4. Increased scientific research.
5. Possible establishment of a global convention on climate.

#### SENEGAL

Senegal, which had the honour and pleasure of hosting the GARP Atlantic Tropical Experiment (GATE) in the summer of 1974, still favours the principle of such research, as can be seen from its participation today in the first session of the Intergovernmental Panel on Climate Change.

Senegal's concern is for the historic continuity of peoples and nations, as well as the prosperity and social well-being of mankind. The attainment of these objectives depends on scientific and technical progress, respect of human rights, international co-operation for development and the maintenance of peace and security throughout the world. All of these are, in turn, linked with the conservation of the environment within the global village which our planet has become.

Faced with the threat of climate change with catastrophic impacts, Senegal, as a Sahelian country already suffering from a series of droughts which have hindered its development, is ceaselessly searching for the causes and consequences of such change.

Our delegation associates itself with the concerns and suggestions of the delegation of Malta, namely :

- Technical co-ordination;
- Protective measures;
- Juridical provisions;
- Appropriate means.

We will spare no efforts to show our international solidarity in taking up this challenge to the survival of humanity.

#### SWEDEN

The Swedish Government considers the possibility of a future climatic change induced by human activities as a serious threat to the sustainable development for all countries on Earth. It welcomes the initiative of WMO and UNEP to create this Intergovernmental Panel on Climate Change. Sweden is

anxious to contribute to the work of the Panel and to consider seriously proposed actions to prevent and mitigate such a development.

Although further research on relevant environmental problems is most essential, increased understanding of the climate system will only come gradually, as will our capability to make more precise predictions of the geographical and temporal features of future climatic changes. Decisions about limiting emissions of greenhouse gases into the atmosphere may have to be taken under considerable uncertainty. Sweden therefore considers it most important to start now with evaluation of socio-economic impacts in broad terms and to analyse in depth alternative response strategies, because the problem is most complex and will take time. It is most important to realize early that major shifts in global environmental policies may well be necessary and particularly the future energy policy in the world needs careful reconsideration. It should be recognized that about 85% of all energy used by man today is produced from fossil fuels and this causes emissions of carbon dioxide. The problems confronting the world community are not simple. Collaboration north-south and east-west is a necessity.

#### SWITZERLAND

Switzerland supports the implementation of IPCC.

Earlier Swiss contributions in the subject area of reconstructing pre-industrial CO<sub>2</sub> and CH<sub>4</sub> concentrations in ice cores continue within the framework of EEC and ESF programmes.

The Swiss Academy of Natural Sciences is planning and conducting a climate programme (PROCLIM) with the following elements :

1. Data, models and process analysis for predictive simulation of complex natural systems;
2. Alpine transect programme to study responses of sensitive boundary environments to climate change;
3. Collaboration with human sciences to address questions of socio-economic impacts of climate changes;

In the frame of the Panel's programme, we stress the need for the following actions :

1. Evaluation of temperature increase of the last hundred years in terms of climate evolution of the last thousand years;
2. Attempts to interpret climate anomalies, such as the heavy rains in the Alps in 1987. Are they forerunners of anticipated climatic change?
3. Statement of most urgent measures in response to the climate issue. Immediate measures, based on existing technology, besides new technologies.

UNITED KINGDOM

United Kingdom welcomes this initiative as an important step towards international consensus. The United Kingdom government has long expressed its concern about the increase in greenhouse gases. We are committed to action based on sound scientific evidence but the UK believes some action is already justified. In particular we urge wide ratification and strengthening of the Montreal Protocol, economic pricing of energy sources to promote development of energy alternatives and energy efficiency and better land use practices to reduce deforestation. We look to the Panel to scrutinise closely the wide uncertainties in the science, to assess the tolerable limits to climate change, and to look for policy responsibilities consistent with the principle of sustainable development.

UNITED STATES OF AMERICA

The Representative of the United States expressed his country's strong support for the establishment of the Intergovernmental Panel on Climate Change (IPCC) as an autonomous, policy-level intergovernmental body open to all countries. The Panel is designed to assess, in parallel activities of these working groups, the science, impacts, and the potential response strategies relating to global climate change. He stressed the global nature of the climate change issue, the importance of international co-operation, and the need for strong, interactive peer review, as part of the working group process. He outlined some of the questions that need to be addressed in order to increase scientific understanding of climate change and related socio-economic and environmental impacts, while at the same time identifying and analyzing options to limit possible climate change or adapt to it. The United States believes that the Panel should provide the central international forum, in co-ordination with other competent bodies, for addressing the climate change issue. He noted his government's commitment to support and to participate actively in the work of the Panel. A number of specific suggestions are included in the opening US statement.

UNION OF SOVIET SOCIALIST REPUBLICS

The extreme topicality of the problem of global climate change and its consequences is impelling the world community to define and adopt adequate counter-measures, since the expected change may have considerable impact on the world economy and various aspects of human activity.

This situation is causing great concern, calling for the united efforts of all, or a majority of countries to solve the different problems connected with assessing the possible climate changes and their consequences. The USSR is in favour of developing such co-operation on both a multilateral and a bilateral basis, making extensive use of the experience and work of

various international organizations, and particularly that of WMO, which is the UN specialized agency responsible for co-ordinating and organizing such work. WMO's work in this field is focused in the World Climate Programme (WCP), which covers practically all aspects of the problem of climate change, including the effectiveness of applying knowledge of climate in the economy of individual countries as well as of the world community.

Considering that the scientific consensus on the role of greenhouse gases in climate change has laid the foundation for the development of political analysis, the objective being to determine possible social and economic measures to adapt climate change and limit the negative consequences, Soviet specialists in this field consider it essential to endeavour to achieve the following :

1. Increase in our knowledge of climate and in the effectiveness of its application in the socio-economic development of society, as well as improvement of methods for forecasting climate changes and the development of scenarios;
2. Assessment of the cost, risk and side effects of the recommended measures; and
3. Determination of juridical procedures to provide a framework for international efforts.

However, we are convinced that, before supporting any particular measures, an in-depth study must be made of them, involving consultations with all those concerned. Extreme care must be taken to avoid precipitated, unbalanced or unco-ordinated decisions whose outcome, because of their global scope, may be undesirable and unforeseeable.

We support the establishment of the Intergovernmental Panel on Climate Change, which should work under the direction of, and be accountable to, the WMO Executive Council and Governing Council of UNEP.

I would also like to mention the need to avoid duplication in the proposed work with efforts being made under the WCP and other programmes, which should not be replaced by new ones, but should be harmoniously developed and intensified.

#### ZIMBABWE

The Government of Zimbabwe would like to thank the Secretary-General of WMO and the Executive Director of UNEP for convening the First Session of the Intergovernmental Panel on Climate Change. Zimbabwe believes that a lot could be achieved from joint efforts by a number of governments to try and understand the cause and impacts of climate change on the environment, water resources, food production and health. The response strategies drawn up by this Panel should therefore be taken in the context of sustainable development.

CEC

The representative of the Commission of the European Community expressed the Community's interest in the joint initiative of WMO and UNEP in setting up the Intergovernmental Panel on Climate Change (IPCC). The European Community has responsibilities in several sectors which impinged to a greater or lesser extent on the climate change issue. These include environmental and energy policies, trade, the development of the internal market and development aid as well as policies in the field of research and development.

The Community had ratified the Vienna Convention on the Protection of the Ozone Layer and would shortly ratify the Montreal Protocol to that Convention. Community energy policy aimed at increasing energy efficiency and the development of renewable sources of energy. The nuclear option might need to be revisited in the light of the global warming effect. As far as the contribution of the Community in the field of development co-operation was concerned, the representative of the Commission stressed the importance of the need to prevent the destruction of tropical forests and for major donors to co-ordinate their actions in the context of the main multilateral financing agencies, particularly the World Bank. The Community's research programmes should help ensure an effective co-ordination of European research projects in areas relevant to climate change and the work of the Panel.

The representative of the Commission indicated that the Community was likely to launch an extensive "policy options" exercise on the greenhouse gas issue. He welcomed the work programme of IPCC and stressed that the Community was ready to support the work programme in appropriate ways and to participate fully in the working groups, particularly those on scientific assessment and policy development.

TERMS OF REFERENCE FOR THE WORKING GROUPS

The Working Groups I, II and III are responsible for the timely production of reports on the assessment of available scientific information on climate change, assessment of the environmental and socio-economic impacts of climate change and formulation of response strategies, respectively. They should build on the past international and national assessments and draw fully on the expertise of existing international scientific bodies. They should co-ordinate their work as far as practicable.

Each Working Group will submit to the Bureau within 60-90 days of its establishment an outline of no more than 10 pages of the topics and issues it proposes to address, its schedule and method of work.

The reports of Working Groups should be written in such a way as to address the needs of policy-makers and non-specialists.

Working Group I should consider, inter alia, factors affecting climate change, including greenhouse gases, responses to these factors of the atmosphere-ocean-land-ice system, assessment of current capabilities of modeling global and regional climate change and their predictability, past climate record and presently observed climate anomalies, projections of future climate and sea level and the timing of changes. The reports should identify the range of projections and their regional variations, gaps and uncertainties. The Working Group should consider including strategies to fill the knowledge gaps and reduce the uncertainties. A peer review process should be incorporated in the preparation of the reports.

Working Group II should view the environmental and socio-economic impacts of climate change in an integrated manner. It should emphasize, inter alia, evaluation of the impacts on a regional/national scale of climate warming and sea level rise, the latter especially in the coastal and island areas, on agriculture, forestry, health, water resources and floods, droughts and desertification, energy and other sectors. The Working Group should include consideration of the impacts of a range of continuously changing climates. The reports should be peer-reviewed.

Working Group III should consider, inter alia, forecasting and assessment of future emissions of greenhouse gases, impacts of changing technology, sources and sinks, adaptation to climate change, strategies to control or reduce emissions and other human activities that may have an impact on climate (e.g. deforestation, changing land-use) and their social and economic implications, and legal matters.

CORE MEMBERSHIP OF WORKING GROUPS

WORKING GROUP I \*

WORKING GROUP II \*

WORKING GROUP III \*

CHAIR

UK (Dr. Houghton)

USSR (Prof. Izrael)

USA

V/CHAIR

BRAZIL  
SENEGAL

AUSTRALIA  
JAPAN

CANADA  
CHINA  
MALTA  
NETHERLANDS  
ZIMBABWE

MEMBERS

CHINA  
FRG  
ITALY  
JAPAN  
DENMARK  
SWITZERLAND  
TANZANIA  
USA  
USSR  
KENYA

ALGERIA  
CANADA  
FINLAND  
INDIA  
ISRAEL  
MEXICO  
NEW ZEALAND  
NIGERIA<sup>1</sup>  
INDONESIA

AUSTRALIA  
BRAZIL  
GDR  
INDIA  
JAPAN  
SWEDEN  
UK  
USSR  
NORWAY  
FRANCE  
SAUDI ARABIA

EX OFFICIO

CHAIRMAN JSC<sup>2</sup>  
REP IGBP<sup>3</sup>

SAC<sup>4</sup>

1) NIGERIA or another country from Africa

2) JSC - WMO/ICSU Joint Scientific Committee for the World Climate Research Programme

3) IGBP - ICSU International Geosphere-Biosphere Programme

4) SAC - Scientific Advisory Committee for the UNEP World Climate Impact Studies Programme

\* The tasks assigned to Working Groups I, II and III are, respectively, assessment of available scientific information on climate change, assessment of environmental and socio-economic impacts of climate change and formulation of response strategies.

DUTIES AND TERMS OF OFFICE OF THE CHAIRMAN, VICE-CHAIRMAN AND RAPPORTEUR  
OF THE PANEL

DUTIES OF THE CHAIRMAN

1. Convene and preside over sessions of IPCC and its Bureau;
2. Set the agenda for the sessions, with the advice and concurrence of the Secretary-General of the World Meteorological Organization and the Executive Director of the United Nations Environment Programme;
3. With support of IPCC Secretariat, take decisions concerning conduct of the sessions before, during and after the sessions;
4. Report on IPCC activities to the appropriate governing bodies of WMO and UNEP.

DUTIES OF THE VICE-CHAIRMAN

1. Perform the duties of the Chairman in the absence of the Chairman;
2. Perform other duties as agreed to between the Chairman and the Vice-Chairman.

DUTIES OF THE RAPPORTEUR

1. Present reports, such as reports of sessions, to IPCC for adoption;
2. Clarify such questions as may arise in connection with such reports.

TERMS OF OFFICE OF CHAIRMAN, VICE-CHAIRMAN AND RAPPORTEUR OF THE PANEL

It is decided that the terms of office of the Chairman, Vice-Chairman and Rapporteur of the Panel last until the end of the 43rd session of the Executive Council of WMO (circa June 1991) or the end of the 16th session of the Governing Council of UNEP (circa June 1991), whichever is later.

However, if the term should end during the intersessional period of the Intergovernmental Panel on Climate Change, the Officers shall continue until the election of new Officers.

## LIST OF ACRONYMS

CICG	Geneva International Conference Centre
CMEA	Council for Mutual Economic Assistance
ECE	Economic Commission for Europe
ESF	European Science Foundation
FAO	Food and Agriculture Organisation of the United Nations
GCC	Gulf Co-operation Council
IAEA	International Atomic Energy Agency
ICSU	International Council of Scientific Unions
IGBP	International Geosphere-Biosphere Programme (ICSU)
IGOSS	Integrated Global Oceans Services System (WMO/IOC)
IOC	Intergovernmental Oceanographic Commission (UNESCO)
IPCC	Intergovernmental Panel on Climate Change
JSC	Joint Scientific Committee for the World Climate Research Programme (WMO/ICSU)
NGO	Non-Governmental Organization
OECD	Organization for Economic Co-operation and Development
SAC	Scientific Advisory Committee for the World Climate Impact Studies Programme (UNEP)
SADCC	Southern African Development Co-ordination Conference
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCDP	World Climate Data Programme (WMO)
WMO	World Meteorological Organization
WWW	World Weather Watch (WMO)

