

THE IPCC: A VIEW FROM THE INSIDE

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Introduction

The Intergovernmental Panel on Climate Change (IPCC) originated from proposals put forward during debate at the Tenth Congress of the World Meteorological Organization (WMO) in Geneva in May 1987. Several Directors of National Meteorological Services, especially from developing countries, called on WMO to establish a mechanism that would enable them to respond authoritatively to the increasingly frequent requirements to brief their Governments and national communities on the reality or otherwise of the threat of global warming as a result of increasing atmospheric concentrations of greenhouse gases. For the most part, Governments, at that stage, were reacting to sensationalised media coverage of predictions of future climate change promulgated by a number of individual scientists and climate modelling groups, as well as the then recently released report of the Brundtland Commission on “Our Common Future” (The World Commission on Environment and Development, 1987) which had dramatically lifted the profile of enhanced greenhouse warming as a threat to the future of the planet.

Although there were already mechanisms in place under the auspices of the sponsors of the World Climate Research Programme (WCRP) for taking stock of the state of knowledge of greenhouse gases, the WMO Congress decided that a more broadly representative mechanism was needed to prepare the authoritative advice needed by governments. Drawing on its experience with the ozone issue, weather modification and the Global Weather Experiment and mindful that the issues involved went beyond the science to matters of environmental policy, the Congress authorised the WMO Executive Council to proceed with the joint establishment, with UNEP (United Nations Environment Programme), of an intergovernmental panel of experts which, a year later, was to become the IPCC.

The full story of the establishment of the IPCC, the development of its modus operandi and the role it played in providing the scientific rationale for the negotiation of the Framework Convention on Climate Change (FCCC) as one of the centrepieces of the 1992 Rio Earth Summit (Figure 1) is contained, inter alia, in Australian delegation reports on the early sessions (Figure 2) of the IPCC (Australian Delegation to the IPCC, 1988-97) which were distributed widely to interested individuals and organisations. This paper provides just a brief analysis of:

- the preparation and findings of the IPCC’s 1990 First Assessment Report (FAR);
- the much more comprehensive and difficult process for preparation of the 1995 Second Assessment Report (Intergovernmental Panel on Climate Change, 1995) including a critical evaluation of the IPCC assessment mechanism;
- the processes being put in place for preparation of the Third Assessment Report (TAR) around 2000-01;

as a basis for judgement on the appropriateness and effectiveness of the IPCC mechanism as an interface between the climate research community and those engaged in the development of policies and strategies to deal with the perceptions and/or realities of the threatened global warming and other possible future changes of climate (Figure 3).

The First Assessment Report

It was clearly recognised at the first session of the IPCC in November 1988 that, if the Panel was to prepare a comprehensive assessment of the climate change issue in time for its submission for consideration at the Second World Climate Conference (SWCC) which was already scheduled for 1990, it would be necessary for its three expert Working Groups dealing with Science, Impacts and Response Strategies to work in parallel rather than in sequence as would have been preferable given the nature of the problem. It was also clear that the IPCC would have to settle for taking stock of existing knowledge derived mainly from the international research effort which

had been proceeding for some years under the auspices of the World Climate Programme (WCP) and it would not itself be able to carry out or sponsor significant new research. WMO and UNEP agreed to provide a small IPCC Secretariat located in WMO Headquarters in Geneva.

At this stage of development of the IPCC process, there was no clear understanding as to what would be the best balance between governmental representation and personal expertise in membership of the Panel. Professor Bert Bolin of Sweden was unanimously elected Chairman of the IPCC on the basis of his personal scientific reputation in the field and, throughout his nine subsequent years of chairmanship of the IPCC, he has served strictly in a personal capacity. Though fully supported by the Swedish Government, he has at no stage taken directions from, or served as a spokesman for, Sweden on the Panel.

Operation of the Working Groups

At the first session of the IPCC, it was assumed that the participating countries would effectively break into three non-overlapping Working Groups with each country represented on the Working Group to which its representative was best equipped, personally, to contribute. Since the UK had made known its willingness to provide technical support for Working Group I (Science) if Sir John Houghton were elected as its Chairman, this fairly quickly fell into place with the only real controversy surrounding the ex-officio inclusion of the Chairman of the Joint Scientific Committee for the World Climate Research Programme (WCRP) and the Chairman of the Scientific Committee for the International Geosphere-Biosphere Programme (IGBP) as non-country members of the Working Group. Agreement was reached on USSR Chairmanship of Working Group II and US Chairmanship of Working Group III, albeit with slightly less formalised support arrangements.

At the first session of Working Group I, it became clear that the way to proceed was not for the Working Group members themselves to prepare the assessment but to draw the active climate research community into the process as Lead Authors. The research community responded enthusiastically and the essential pattern of operation of Working Group I was set. The decisive event in the preparation of the Science component of the First Assessment Report (FAR) was the February 1990 Edinburgh meeting of Chapter Lead Authors along with a small group of eminent non-involved climate scientists to draw the key conclusions together and draft a “Summary for Policymakers”. This meeting was remarkable for the intensity of the scientific exchanges and the high level of commitment of all participants to ensuring the scientific integrity of the report. A particularly vigorous debate developed over the best form of presentation of the Summary for Policymakers, especially its Executive Summary, which was subsequently to become the most widely referenced IPCC document and the principal rationale for proceeding with the negotiation of the Framework Convention on Climate Change (FCCC). After long debate, the meeting abandoned a more cautiously written narrative Executive Summary in favour of the more punchy and a much quoted headlines:

- We are certain of the following . . .
- We calculate with confidence that . . .
- Based on current model results, we predict . . .
- There are many uncertainties . . . due to our incomplete understanding of . . .
- Our judgement is that . . .
- To improve our prediction capability, we need . . .

Once consensus had been reached on the key words, the report was formally approved after some editing by the following Second Session of Working Group I (Figure 2) and was already published (Houghton et al, 1990) by the time of the August 1990 Sundsvall Session of the IPCC which was convened to finalise and approve the First Assessment Report in toto. Working Groups II and III had a great deal more difficulty in developing their modus operandi and preparing draft reports in time for the Sundsvall Session of the IPCC.

The IPCC Report, the SWCC and the INC

By the time the delegations from 71 nations and 52 national and international organisations assembled in Sundsvall, preparations were well in hand for the IPCC's report to be presented to the Second World Climate Conference (SWCC) in October-November 1990 and preliminary work was already under way under WMO-UNEP auspices for the development of a framework convention to limit the emission of greenhouse gases. As it turned out, the Sundsvall Session ran into severe difficulties with several developing countries working to prevent the development of any overall consensus report drawing together the conclusions of the three Working Groups. There was a mixture of admiration and resentment for the nicely published Working Group I Report which was handed out at the Session. Eventually, after protracted negotiation, the broad content of the First Assessment Report was approved by acclamation and the action moved to the SWCC in Geneva.

The SWCC provided a venue for a large number of heads of Government and State and Ministerial heads of delegations to publicly state their acceptance of the essential conclusions of the IPCC and their support for action to negotiate a Convention in time for signature at the 1992 Rio Earth Summit. At this stage, there was fairly general support for the conclusions of the IPCC within the scientific community, albeit some scientists felt concerned at the forthrightness of some of the language and the apparent lack of recognition by policymakers of the significance of the uncertainties referred to in the report.

As the Intergovernmental Negotiating Committee (INC) for the Framework Convention on Climate Change moved into place under UN (rather than WMO and UNEP) auspices, the IPCC science community felt a mixture of satisfaction at the prompt action that their work had triggered at the political level and apprehension at the realisation that the political processes were beginning to move ahead of what some, at least, felt the science could support. The IPCC, however, quickly regrouped to prepare a Supplementary Report (Figures 1 and 2) for reassurance of the INC immediately prior to its May 1992 finalisation of the text of the Convention.

The Second Assessment Report

The IPCC's Second Assessment Report (SAR) prepared over the period 1992-95 as input to the Second Session of the Conference of the Parties (COP) to the FCCC (Figure 1) proved to be a much more demanding, difficult and controversial process than the First Report. The SAR consisted of separate reports from its three reorganised Working Groups (whose Summaries for Policymakers were formally approved line by line by the Working Groups and accepted by the Panel) and the so-called Synthesis Report which was approved line-by-line by the Panel itself at its December 1995 Session in Rome (Figure 2). It may be of interest to first summarise the essential scientific conclusions of the SAR and then provide an assessment of the process through which it was produced (Zillman, 1997).

Main Conclusions of the SAR

The main conclusions of IPCC Working Group I on the Science of Climate Change were:

- Greenhouse gas concentrations have continued to increase.
- Anthropogenic aerosols tend to produce negative radiative forcings.
- Climate has changed over the past century.
- The balance of evidence suggests a discernible human influence on global climate.
- Climate is expected to continue to change in the future.
- There are still many uncertainties.

The reports of Working Groups II and III provided an assessment of possible impacts of climate change (more extreme deserts, intensification of the global hydrological cycle, wide ranging and mostly adverse effects on human health, developing countries at great risk . . .) and reported on the economic and social dimensions of climate change and possible mitigation strategies. The so-called Synthesis Report attempted to draw the conclusions of the three Working Groups together and looked in particular at the issues surrounding Article 2 (the ultimate objective) of the FCCC.

An Evaluation of the SAR

Like the First Assessment Report (FAR), the Second Assessment Report (SAR) had a major impact in the scientific and policy communities, especially its frequently misunderstood conclusions in respect of the science. It also became the focus of some controversy in the scientific community. Viewed from the inside and with the benefit of almost two years of hindsight, there are a number of aspects of the preparation of the SAR which deserve comment.

Confusion on the Definition of Climate Change

There is a serious inconsistency between what the IPCC Working Group (WG) I scientific community regard as “climate change” and what constitutes “climate change” in the language of the Convention - an inconsistency which cannot help but lead to confusion in the public mind on one of the threshold issues of the debate, viz whether human activities have, or have not, yet been conclusively shown to have affected global climate. According to the Convention, “climate change” is that which is due to human activity and is in addition to natural variability. The IPCC WG I, on the other hand, regards “climate change” as including natural variations. Thus, when the IPCC says “climate has changed over the past century”, it is simply saying the climate now is not the same as it was a century ago (whatever the cause) whereas the FCCC listener will reasonably interpret such a statement as the scientific community affirming that human influence has changed climate over the past century.

The Inherent Tension of Being Both Scientific and Intergovernmental

The IPCC is probably unique in attempting to use a formal UN-style intergovernmental mechanism to produce an objective scientifically-credible assessment of scientific knowledge. The achievement, in terms of informed dialogue between the scientific and policy communities, has been substantial but the process has been fraught with enormous tensions. Diplomats in delegations from countries with firm policy positions clearly have not found it easy at IPCC sessions to resist interventions aimed at influencing the assessment of the science to national advantage. Equally, the scientists in the process have been extremely conscious of the formality of the environment in which their personal scientific views were being expressed and have not always found it easy to conduct the normal discourse of science in such a politically charged atmosphere. On balance, it must be said that the process has worked extraordinarily well but there have certainly been occasions on which its integrity has been under great stress.

The Influence of Lobby Group Pressures

Both industry and environmental lobby groups were extremely active in the Second Assessment Report process, particularly at the Madrid and Rome sessions in November and December 1995. Heavy individual lobbying, public pressuring of “offending” delegations through placards, newsletters and handouts, emotive language and displays and subtle reminders that lobbyists were not averse to reporting stances taken by delegates or experts to home country media and governments in ways that would embarrass, left the scientific members of some IPCC delegations feeling distinctly uncomfortable in presenting their views openly and honestly on the scientific issues under debate.

The Pressure for Consensus

While one of the great achievements of the IPCC process has been its contribution to consensus in both the national and international scientific communities as to what can reasonably be said on the current state of climate change science, there has also been a down side. Those who have been heavily involved in the IPCC and have developed a sense of ownership and pride in what has been achieved have, during the sessions, felt a strong need to avoid a situation in which the IPCC was seen to “fail”. As a result, there has been unusually intense pressure for consensus to be achieved even when many individual participants clearly felt extremely uncomfortable with signing on to the “consensus” language. These pressures became extreme in some of the late night meetings when the time for achievement of consensus was running out, delegations were exhausted and dissenting individuals were subject to considerable peer pressure to agree in order to avoid the stigma of being seen to have prevented the IPCC from achieving a consensus report. These pressures have led to increasing questioning of the appropriateness of the concept of “science by consensus”.

The Time Frame of the Review Process

Despite the three years available for the preparation of the Second Assessment Report, in the end the time frame for the review process was extremely tight and many countries felt quite unable to conduct an in-depth review with any measure of integrity in the time allowed. This resulted in a number of delegations in Madrid and Rome complaining that they had not had adequate opportunity to consider the documentation and criticising the IPCC for not adhering to its own rules of procedure.

The Risk of Disproportionate Influence of Dominant Personalities

The system of preparation of chapters of the IPCC reports in which the selected Lead Authors play a very strong role in determining the content of the final report provided a vehicle for dominant personalities in the scientific community to play a stronger role than some of their colleagues believed appropriate. While there were a number of checks and balances provided by, for example, the Working Group Bureaux and the core groups charged with writing the Summaries for Policymakers, the impression remained within some of the Groups that certain individuals were overly dominant in using the IPCC process as a fast-track way of getting their own scientific views built into the orthodoxy of climate change.

The Location of Authority for Final Decision with Lead Authors

In order to avoid the risk of having the IPCC reports made vulnerable to charges of political influence, the IPCC Chairman and the WG Co-chairmen were meticulous in insisting that the final decision on whether to accept particular review comments should reside with chapter Lead Authors. This was at variance with the normal role of journal editorial boards and led to suggestions that some Lead Authors ignored valid critical comments or failed to adequately reflect dissenting views when revising their text.

The Significance of the Chapter 8 Controversy

By far the most heated controversy surrounding the Second Assessment Report was that which erupted in the US, in particular, over allegations of politically motivated rewriting of Chapter 8 (Detection of Climate Change and Attribution of Causes) of the WG I report. Without going into the detail of this controversy, I believe it is fair to say that, while there was some unavoidable informality in the IPCC procedures relating to Chapter 8 - before, at and after the November 1995 Working Group I Session in Madrid - there was no conspiracy involved and the suggestions of “scientific cleansing” were unfounded. There was some inevitable naivety on the part of some of the scientists who found themselves thrust into the politically charged environment at Madrid, a certain amount of passion on both sides of the scientific debate, and an understandable sense of urgency on the part of those who were committed to getting the Report approved and published in an appropriate up-to-date form, but there was no conspiracy.

Who Decides What Constitutes Dangerous Anthropogenic Interference with the Climate System?

One of the most important questions to which policymakers are seeking answers is at what upper limit of greenhouse gas concentration in the atmosphere will it be possible to achieve the ultimate objective of the Convention (viz to avert dangerous anthropogenic interference with the climate system). It is fair to say that, throughout the Second Assessment Report process, there has been a virtual stand-off between the IPCC Chairman and the majority of IPCC members on the one hand who believe that this is a political not a scientific question; and Russia and a few other members who argue forcefully that it is a scientific question and is, in fact, the most important question which the IPCC must address. This difference of views on the IPCC’s responsibility in respect of Article 2 of the Convention remains unresolved.

The Third Assessment Report

While continuing with the finalisation of a number of so-called Technical Papers based on the SAR, the preparation of four “Special Reports” and work on greenhouse gas inventory methodologies, the IPCC is now in the process of regrouping and gearing up for the preparation of its Third Assessment. Following his election to the position of Chairman-elect of the IPCC in September 1996, Dr Robert Watson of the US will take over the chairmanship of the IPCC from Professor Bolin at the end of its Thirteenth Session in the Maldives in September 1997. He has, over the past year, engaged in extensive consultation on a range of issues including:

- Scope of the Third Assessment Report.
- Structure of the Third Assessment Report.
- Scope of the Working Groups.
- Scope and Structure of the Synthesis Report.
- Role of the IPCC in Inventories and Methodology.
- Peer Review of the Third Assessment Report.
- The Use of Editorial Boards.
- Timing of the Third Assessment Report.
- Participation of Experts from Developing Countries and Countries with Economies in Transition.
- Participation of Experts from Business/Industry/Finance and Environmental Organisations.
- Author and Peer-Reviewer Nomination Processes.
- Utilisation of the Non-English Language Literature
- Publication Procedures.
- Translation Procedures.

- IPCC Secretariat.
- Structure of the IPCC Bureau.
- Funding for Technical Support Units.

It is envisaged that the Maldives Session of the IPCC will reach agreement on these and also on a review of its rules of procedure with a view to initiating work almost immediately on the Third Assessment Report with a target for completion of 2000-2001.

There is little doubt that, with increasing attention focussing on the possible impacts of increasing greenhouse forcing at the regional level and the pressures for binding commitments to ensure reductions under the FCCC, the preparation of the Third Assessment Report is destined to be both difficult and controversial. The Chairman-elect has indicated his personal commitment and the widespread commitment within the IPCC community to preserving the integrity of the assessment process in support of the policy and political processes under the Convention. It will be a challenging task.

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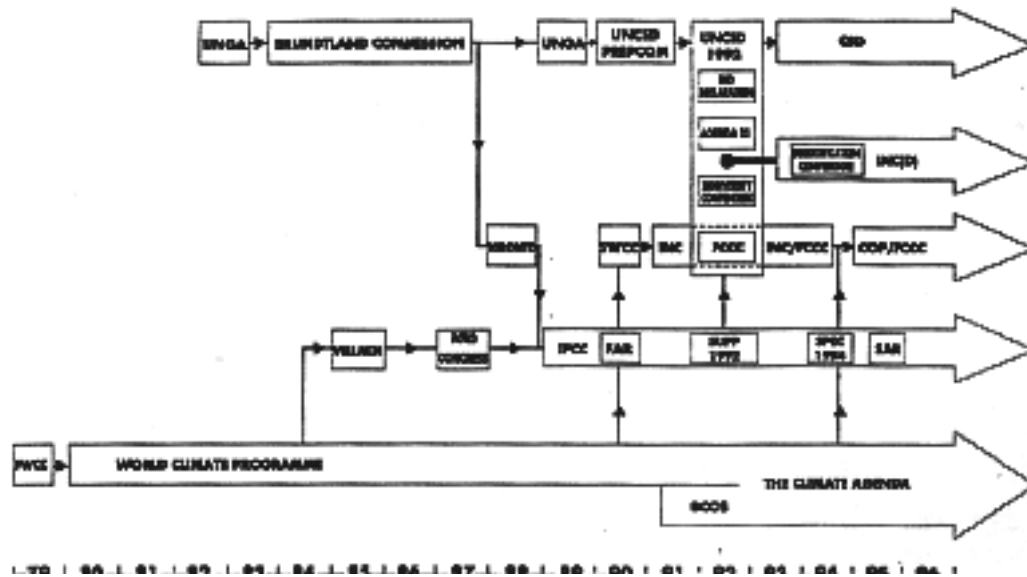


Figure 1. The key influences and events in the international development of climate as a major issue of international public policy 1979-1996. Beginning with the (First) World Climate Conference (FWCC) in 1979 and the establishment of the World Climate Programme by the Eighth World Meteorological Congress, the international scientific effort led in to the 1985 Villach Conference statement on the role of carbon dioxide and other greenhouse gases in climate variations and associated impacts. The parallel activity of the Brundtland Commission established by the United Nations General Assembly (UNGA) and the 1988 Toronto Conference on the Changing Atmosphere lifted the profile of the global threat of human-induced climate change and reinforced the urgency of the work of the Intergovernmental Panel on Climate Change (IPCC). Its First Assessment Report (FAR) and the Ministerial Declaration of the Second World Climate Conference (SWCC) which it inspired led in to the work of the Intergovernmental Negotiating Committee (INC) on the development of the Framework Convention on Climate Change (FCCC) as a centrepiece of the 1992 United Nations Conference on Environment and Development (UNCED). Through its 1992 Supplementary Report (SUPP), its 1994 Special Report (SPEC) and its 1995 Second Assessment Report (SAR), the IPCC has continued to provide scientific input to the ongoing policy and political processes proceeding under the auspices of the Conference of the Parties (COP) to the FCCC.

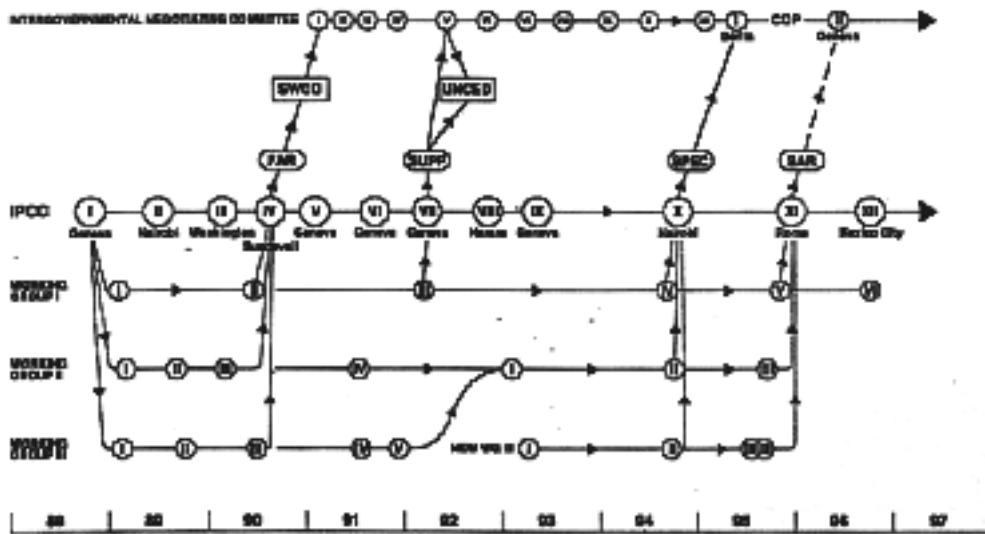


Figure 2. A schematic representation of the IPCC (Intergovernmental Panel on Climate Change) process 1988-96. The sessions (numbered in Roman numerals) of the IPCC and its three Working Groups, initially on Science (Working Group I), Impacts (Working Group II) and Response Strategies (Working Group III), are shown in the bottom half of the diagram with its major outputs (1990 First Assessment Report (FAR), 1992 Supplementary Report (SUPP), 1994 Special Report (SPEC) and the 1995 Second Assessment Report (SAR)) feeding into the negotiating sessions of the Intergovernmental Negotiating Committee and the Conference of the Parties (COP). The sessions of the Bureaux of the IPCC and its Working Groups and the numerous IPCC scientific workshops and lead author drafting sessions are not shown.

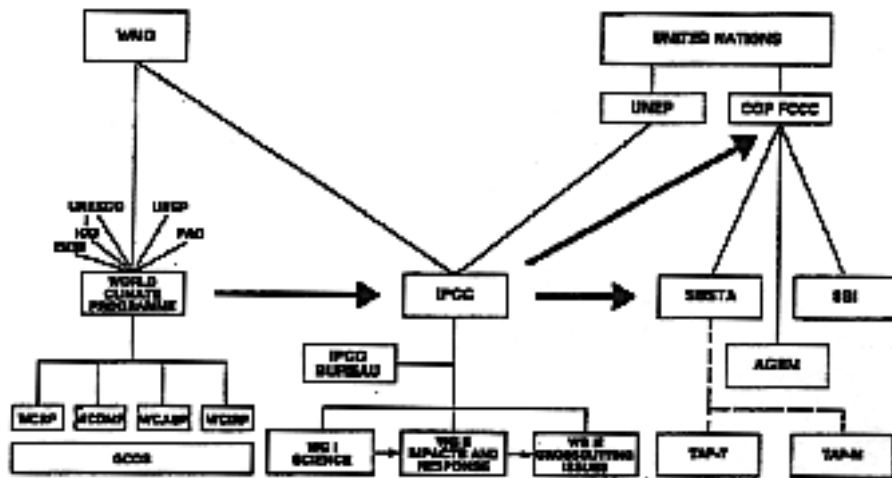


Figure 3. The IPCC in the bridging role of providing scientific and technical assessment of work carried out through the World Climate Programme and its components (World Climate Programme (WCRP), World Climate Data and Monitoring Programme (WCDMP), World Climate Applications and Services Programme (WCASP), World Climate Impact and Response Strategies Programme (WCIRP)) and associated activities such as the Global Climate Observing System (GCOS) to serve the needs of the Conference of the Parties to the Framework Convention on Climate Change (COP FCCC) and its Subsidiary Bodies SBSTA (Subsidiary Body for Scientific and Technological Advice), AGBM (Ad Hoc Group on the Berlin Mandate) and SBI (Subsidiary Body for Implementation). The SBSTA Technical Advisory Panels (TAP) are provided for in the Convention but have not yet been established.

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Dr John W Zillman AO FTSE is Director of the Commonwealth Bureau of Meteorology headquartered in Melbourne. He is responsible for the overall operation of the Bureau including the Bureau of Meteorology Research Centre (BMRC) whose scientists contributed substantially to the First and Second Assessment Reports of the Intergovernmental Panel on Climate Change (IPCC). Dr Zillman was personally involved in the early establishment of the Panel and is currently Principal Delegate of Australia to the IPCC and a member of its Bureau representing the Southwest Pacific. He has attended almost all Sessions of the Panel and many Sessions of its Working Groups and he was one of the authors of the Technical Summary of the Science contribution to the Second Assessment Report. Earlier in his career, Dr Zillman co-edited the Cambridge University text on Climate Change and Variability in 1978. He is currently President of the World Meteorological Organization. He holds BSc and BA degrees from the University of Queensland, MSc from Melbourne University and PhD from the University of Wisconsin. He was recently awarded the degree of DSc (honoris causa) from Monash University.