

The Intergovernmental Panel on Climate Change (IPCC)

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Chair

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Mr. Chairman, Excellencies, distinguished delegates, ladies and gentlemen:

It is a pleasure and honor for me to address you today as you debate a protocol to limit greenhouse gas emissions. The fact that you have allowed me to address you as the chair of the IPCC is evidence that you recognize the importance of basing your Convention and potential future protocols on sound scientific, technical and economic information.

Last Monday, Dr. Bert Bolin, the former Chair of the IPCC, in his address to the delegates, discussed a number of key issues of importance to your negotiations, including the inertia of the climate system, burden sharing, the role of terrestrial ecosystems as sources and sinks of greenhouse gases, and the implementation of measures. I will not repeat what Dr. Bolin has already said as his statement is available to all delegates.

International scientific, technical and economic assessments, are in my opinion, essential for developing international environmental agreements for politically complex issues such as global climate change. They provide a comprehensive view of the state of knowledge, including an assessment of uncertainties, thus providing a basis for policy formulation. There is of course an excellent precedent, the Vienna Convention for the Protection of the Ozone Layer and its associated Montreal Protocol and the subsequent amendments and adjustments, which utilized a series of international assessments of ozone depletion to guide the cost-effective phase-out of chlorine- and bromine-containing chemicals responsible for destroying the fragile ozone layer that protects life on Earth from harmful ultraviolet radiation.

The issue of ozone depletion should be a reminder to this body that with political will, governments in collaboration with industry and other key stakeholders, can find equitable and cost-effective solutions to global environmental problems using the best scientific and technical information. While it is easy to say today that ozone depletion was a scientifically and politically simpler problem than that of climate change, when the Montreal Protocol was negotiated in 1987 nobody viewed it as a simple problem, yet a way forward was found.

International assessments, such as those produced by the IPCC, provide a comprehensive assessment of the current state of knowledge, including a critical evaluation of key uncertainties. Over 2000 experts from nearly 100 countries, from all stakeholder groups, i.e., academia, government agencies, industry and environmental organizations, participated in the preparation and peer-review of the IPCC Second

Assessment Report. These assessments provide policy-relevant information, but are not policy-prescriptive.

State of Scientific Knowledge

Let me briefly summarize some of the key scientific findings relevant to four policy-relevant questions that are pertinent to your discussions here in Kyoto: (i) are human activities changing the Earth's atmospheric composition and climate? (ii) is a change in the Earth's climate important for human societies? (iii) can policy formulation wait for scientific certainty? and (iv) are there cost-effective options to reduce greenhouse gas emissions?

First: Are human activities changing the Earth's atmospheric composition and climate? — Yes

- * There is no doubt that the composition of the Earth's atmosphere is changing because of human activities, primarily because of the combustion of fossil fuels and land-use practices;
- * The Earth's climate is becoming warmer, precipitation patterns are changing, and sea level is rising;
- * The observed changes in climate cannot be explained by natural processes alone, hence the IPCC concluded that human activities are implicated in the observed changes in climate; and even more relevant to your discussions here in Kyoto,
- * Without policies to limit greenhouse gas emissions, the Earth's climate is projected to warm by 1.0 to 3.5 degrees Centigrade by 2100, and will be accompanied by an increase in sea level of 15 to 95 cms.

Second: Is a change in the Earth's climate important for human societies? — Yes

- * While there may be some beneficial effects of climate change, in most parts of the world, climate change is projected to adversely effect human health (an increase in the incidence of heat stress mortality and vector-borne diseases, such as malaria and dengue); ecological systems (in particular the degradation of forests and coral reefs); agriculture (reduced yields in the tropics and sub-tropics), human settlements (the displacement of tens of millions of people because of sea level rise) and water resources (especially in areas that are already water scarce or water stressed);
- * Developing countries are more vulnerable than developed countries; and the
- * costs of inaction are not insignificant, potentially several percent of world GDP in a doubled carbon dioxide equivalent world at equilibrium.

Third: Are there problems with waiting for more scientific certainty? — Yes

- * Because the atmospheric residence time of carbon dioxide, the major anthropogenic greenhouse gas, is more than a century, this means that if policy formulation waits until all scientific uncertainties are resolved, and carbon dioxide and other greenhouse gases are responsible for changing the Earth's climate as projected by all climate models, the time to reverse the human-induced changes in climate and the resulting environmental damages, would not be years or decades, but centuries to millennia, even if all emissions of greenhouse gases were terminated, which is clearly not practical; and
- * Even with comprehensive research programs the key scientific uncertainties will only be resolved slowly, and we should remember that scientific uncertainties can go in either direction, i.e., we may be over-estimating the implications of greenhouse gas emissions, equally we may be underestimating the impact of greenhouse gas emissions -- remember, we under-estimated the impact of chlorine- and bromine-containing gases on stratospheric ozone depletion.

Fourth: Are there cost-effective options to limit greenhouse gas emissions? — Yes

- * There are many technologies, policies and practices that can be adopted to start to limit greenhouse gas emissions cost-effectively in both developed and developing countries for both the production and supply of energy. Ultimately, however, if greenhouse gas concentrations are going to be stabilized at levels that do not cause dangerous anthropogenic perturbation to the Earth's climate system, the production of energy must become significantly less carbon-intensive than it is today.
- * Carbon can also be cost-effectively sequestered in soils and above ground biomass through changes in agricultural and forest practices; and
- * There are also multiple benefits in addressing climate change, for example, simultaneous reductions in local and regional air pollution.

How can the IPCC assist the Convention process in the future?

First I would like to note the excellent working relationship that already exists between the IPCC and the Convention Secretariat and with the subsidiary bodies of the Convention, the AGBM, SBI and SBSTA. As you probably already know the IPCC has produced a series of technical papers and special reports specifically at the request of the AGBM and SBSTA to assist the Parties to the Convention in their deliberations. In fact, the IPCC is continuing to work on two reports requested by the SBSTA: (i) "Aviation and the Global Atmosphere"; and (ii) "Methodological and Technological Aspects of Technology Transfer: Opportunities for Technology Cooperation". I look forward to presenting these two reports to you in early 1999.

Second, two points are quite clear: (i) whatever emissions reductions are agreed this week in Kyoto they will only represent the first step in a long journey to stabilize greenhouse gas emissions at a level that will not cause dangerous anthropogenic perturbation with the climate system (Article 2 of the FCCC), and (ii) new research results will continually become available that will address some of the key scientific, technical and economic uncertainties that currently exist. Consequently, the Convention will have to make a series of policy decisions over the coming years to adapt to new scientific, technical and economic information, which can be assessed by the IPCC. Ultimately this body will have to decide what is the appropriate stabilization level of greenhouse gas concentrations to protect the Earth's climate; what is the most appropriate pathway to stabilization; and what is the most appropriate mix of technologies, policies and practices. The IPCC cannot, and should not, provide the answers to these questions, but it can provide the scientific, technical and economic information for you to make informed decisions, i.e., the IPCC can assess the environmental and socio-economic implications of different policy decisions.

Future Work of the IPCC

IPCC will produce a third assessment report by early 2001 that will be comprehensive and cover the complete range of scientific, technical, economic and social issues associated with the climate system and climate change deemed important by the expert and policy-making communities. In particular, the IPCC will consult the Parties to the Framework Convention on Climate Change, through the subsidiary bodies to the Convention, SBSTA and SBI, to assess what issues they deem to be most important. The Third Assessment Report will primarily assess information generated since the Second Assessment Report, recognizing that climate change is a global issue, but emphasizing the assessment of the regional aspects of climate change.

The Third Assessment Report will consist of three IPCC Working Group Reports:

- * Working Group I will assess the scientific aspects of the climate system and climate change;
- * Working Group II will assess the scientific, technical, environmental, economic and social aspects of the vulnerability (sensitivity and adaptability) to climate change of, and the negative and positive consequences (impacts) for, ecological systems, socio-economic sectors and human health, with an emphasis on regional sectoral and cross-sectoral issues; and
- * Working Group III will assess the scientific, technical, environmental, economic and social aspects of the mitigation of climate change, and through a multi disciplinary task team, will assess the methodological aspects of cross-cutting issues (e.g., equity, discount rates and decision making frameworks).

In addition, there will be a Synthesis Report which will provide a policy-relevant synthesis and integration of the three Working Group Reports. The Synthesis Report will be written in a non-technical style suitable for policymakers and will address a broad range of key policy-relevant questions. These policy-relevant questions will be developed in consultation with the President of the Conference of the Parties (COP) and the chairs of the subsidiary, and other, bodies of the COP, using the mechanism of the IPCC/FCC Joint Working Group. Questions that might be addressed could include:

- * for a range of non-intervention scenarios for the future of all greenhouse gas emissions and sinks and aerosols, what are the resulting atmospheric concentrations of greenhouse gases and aerosols, the global and climatic changes and associated impacts?
- * what policy intervention scenarios for emissions and sinks would be needed to stabilize greenhouse gas concentrations at a range of levels giving particular attention to carbon dioxide stabilization between 350 and 750 ppmv?
- * what are the impacts of climate change associated with each of these scenarios and with different stabilization levels, noting the time lags between climate change and impacts?
- * what possible combination of policies concerning all sources and sinks might be able to achieve stabilization of greenhouse gas concentrations at different levels and for different constraints on rates of change? and
- * what are the technological, economic and equity implications of mitigation and adaptation policies for developed and developing countries at a regional level, for the intervention as well as for the non-intervention scenarios?

The peer-review process will be further strengthened. All future IPCC reports will undergo sequential open expert and expert/government peer reviews prior to acceptance by the Working Groups, while the Summaries for Policymakers will undergo simultaneous expert/government reviews and then be approved line-by-line by the Working Groups. This peer-review process will be strengthened by using an editorial review process that will ensure that all substantive expert and government review comments are afforded appropriate consideration; lead authors will be advised on how to handle contentious/controversial issues; and ensure that all genuine scientific controversies are reflected adequately in the text.

The IPCC is committed to promoting enhanced participation of experts from developing countries and countries with economies-in-transition as well as enhanced participation of experts from business/industry/finance, development and environmental organizations.

I wish you the wisdom of Solomon and the patience of Job as you wrestle with an issue critical, not only for our generation but for the many generations that will follow us. The science has spoken, the response is up to you.