
SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE

Eleventh session

Bonn, 25 October - 5 November 1999

Item 3 of the provisional agenda

SUBSIDIARY BODY FOR IMPLEMENTATION

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**IMPLEMENTATION OF ARTICLE 4, PARAGRAPHS 8 AND 9, OF THE
CONVENTION (DECISION 3/CP.3 AND ARTICLE 2, PARAGRAPH 3,
AND ARTICLE 3, PARAGRAPH 14, OF THE KYOTO PROTOCOL)**

**Report on the workshop envisaged in the annex
(Programme of work) to decision 5/CP.4**

Note by the Chairman of the SBSTA

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I. MANDATE

1. The Conference of the Parties, at its fourth session, agreed upon the programme of work set out in the annex to decision 5/CP.4, including the organization of an expert workshop. Under the guidance of Mr. Kok Kee Chow, the Chairman of the Subsidiary Body for Scientific and Technological Advice (SBSTA), assisted by Mr. Mohammad Reza Salamat, the Vice-Chairman of the Subsidiary Body for Implementation (SBI), this workshop was held from Tuesday, 21 September 1999 to Friday, 24 September 1999 at Bonn, in accordance with the terms of reference adopted by the SBSTA, at its tenth session (FCCC/SBSTA/1999/6, para. 80).

II. SCOPE

2. This document is intended to respond to the requirements of the work programme set out in decision 5/CP.4, in accordance with which the subsidiary bodies are to consider the outcome of the workshop and prepare a report including conclusions and/or a draft decision for COP 5, which would identify initial actions to address the implementation of Article 4.8 and 4.9 of the Convention, as well as Articles 2.3 and 3.14 of the Kyoto Protocol.

3. The workshop included expert presentations followed by panel discussions in which the policy-related implications of the information presented were addressed. The agenda for the workshop is included in the annex to this note.

III. WORKSHOP SUMMARY

A. Information

4. Information has been available and is being developed on the **adverse effects of climate change**. More information is needed on the nature and magnitude of the effects on countries subject to the circumstances laid out in Article 4.8 and 4.9 of the Convention. Work related to vulnerability and adaptation is still at an early stage.

5. Information gaps centre around uncertainties related to national and regional impacts and to reducing the vulnerability of natural ecosystems and semi-managed resources, as well as to potential consequences on livelihood security. There are differences in availability of data on, and in scientific understanding of, the various areas; for example, there is better understanding of small island countries and countries with low lying coastal areas than areas liable to drought and desertification. Similarly, there is much more information on water resources and agriculture than there is on food security and health. Gaps have also been identified on the interaction among different impacts, as well as on the assessment of effective adaptive strategies. It is difficult to establish with certainty the proportion of the impacts directly attributable to anthropogenic climate change.

6. Some participants felt that sufficient information was available on the **impact of the implementation of response measures** by Parties included in Annex I to the Convention (Annex I Parties). Some other participants felt that further information needed to be developed with regard to the nature and magnitude of the impact on countries subject to the circumstances laid out in Article 4.8 and 4.9 of the Convention. Some gaps also remain in the assessment of the social, economic and environmental impacts of the implementation of response measures, particularly in relation to uncertainties in determining the baselines.

B. Specific needs, concerns and special situations

7. Developing countries would be affected by the **adverse effects of climate change** in different ways, depending on their national circumstances, their economic conditions and their capacity for adaptation. The adverse effects of climate change will have an impact on the livelihood security of developing countries by affecting water resources, agriculture and food security, economic activities and health, and in particular the least developed countries, where widespread poverty limits the capacity for adaptation. Countries with areas prone to natural disasters and other climate-related risks, including small island countries and countries with low-lying coastal areas, will be more affected by the adverse effects of climate change.

8. The adverse effects of climate change would also lead to secondary effects on developing countries, and in particular on the least developed countries, which could damage the life-supporting capacity of natural systems and/or the sustainability of human habitation. Such effects might include the use of poorer quality sources of fresh water, abandonment of the rural economy, displacement of settlements and infrastructure, and the occurrence of epidemics.

9. Capacity-building related to institutions and human resources at the local, national and regional levels will need to be further developed to reduce vulnerability. Some Parties pointed out that assistance would be needed in this context. Developing countries, and particularly the least developed countries, have limited capacities for conducting research on the adverse effects of climate change and for vulnerability assessment. There is a need to move towards implementing integrated approaches, such as integrated coastal zone management, and further developing integrated assessment models, as well as identifying effective adaptation strategies and assessing how to integrate these into national development programmes.

10. The **impact of the implementation of response measures** will affect developing country Parties through changes in the terms of trade, changes in income levels, and shifts in international capital flows. In this context, an especially important sector is the international energy sector. Some participants pointed out that the models presented in the workshop showed that the oil producing developing countries may be the most adversely affected and would have to bear a disproportionate or abnormal burden. Other participants pointed out that there were disparities in the timing and magnitude of this potential impact, and that the models did not cover the range of possible response measures.

C. Addressing information gaps to support actions

11. Cooperative research on the **adverse effects of climate change** on developing countries subject to the circumstances laid out in Article 4.8 and 4.9 of the Convention is needed. In this regard, practical capacity-building measures are needed in developing countries. This research should cover the adverse effects on social and economic conditions, in particular, on water resources, agriculture, food security, economic activities and health, including in the least developed countries. The research should focus on the regional and national levels, should monitor changes in both vulnerability of ecosystems and effects of climate change, and should be integrated with an analysis of the level of certainty on the adverse effects of climate change. Research is also required to distinguish between effects due to climate change and those due to other natural phenomena or economic and social changes, as well as the extent to which climate change interacts with other natural phenomena and with socio-economic activities. More research on the potential changes in risks associated with climatic hazards such as drought, floods, and hurricanes is needed. This will also lead to information on what adaptation measures might be adopted in the most cost-effective manner and on what time-scale. Country-specific information on adaptation could be provided through national communications.

12. In addressing the **impact of the implementation of response measures**, efforts are needed to address the uncertainties in the information available on changes in patterns of trade, capital flows, availability and accessibility of new technologies, response measures undertaken by all Parties, and any influence of the Kyoto mechanisms. Modelling activities could help identify and refine our understanding of the key underlying assumptions. Country-specific information on the impact of existing policies and measures could be provided through national communications. Some participants felt that sufficient information was available to take initial actions, including actions related to funding, insurance and the transfer of technology. Other participants felt that significant uncertainties in baseline assumptions and model parameters remained, so approaches to addressing the impact of the implementation of response measures on developing country Parties would need to take into account these uncertainties.

13. More information is needed on actions related to funding, insurance and the transfer of technology to meet the needs and concerns arising from the adverse effects of climate change and/or the impact of the implementation of response measures.

D. Views on preliminary actions

14. It is recalled that the Convention has called upon the Parties to give full consideration to actions under the Convention to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change, and the impact of the implementation of response measures. The Convention has singled out the least developed countries as a vulnerable group, and has requested the Parties to take full account of the specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology.

(a) Initial actions addressing the adverse effects of climate change on water resources, agriculture and food security, economic activities and health, as well as on coastal zones, should focus on:

- (i) Further developing methods for sensitivity, vulnerability and adaptation assessment, including through research and studies identified in section C above, and the information could be integrated in national communications;
- (ii) Capacity-building in environmental management and conducting integrated assessment on areas identified in section C above;
- (iii) Disseminating examples of useful strategies to reduce vulnerability;
- (iv) Monitoring and systematic observation of climate change impacts in developing countries in order to facilitate timely adaptation; and
- (v) Identifying adaptation measures and facilitating timely adaptation where near-term climate change impacts are well understood, and adaptation measures are feasible;

(b) Initial actions to address the impact of the implementation of response measures should focus on additional model development and assessment, including through studies identified in section C above. The information should be developed with experts from both developing and developed countries, as this will improve the models and lead to capacity-building, and the information could be integrated in national communications.

15. Some participants suggested that the policies and measures reported by Annex I Parties and the projected actions to implement the Kyoto Protocol should be examined in order to analyse potential impacts on the economies of oil producing countries and other developing countries under Article 4.8 and 4.9 of the Convention. In this context, it was also suggested that the subsidiary bodies should continue to examine information needed to minimize the adverse social, environmental and economic impacts of response measures by Annex I Parties on developing country Parties. This information should cover the following:

(a) Tax restructuring to reflect the carbon content of fuels, including measures to discourage the production of fossil fuels and nuclear energy;

(b) Compensation;

(c) Assistance to developing countries, including increasing investment, to help them diversify their economies.

Other participants stated that the uncertainties associated with the impact of the implementation of response measures are such that consideration of specific actions is at best premature. They noted that actions related to the impact of the implementation of response measures under the Kyoto Protocol would be considered at the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its first session (COP/MOP 1). These participants also pointed out that any consideration of information relating to the impact of the implementation of response measures should include examination of ways in which developing countries can adapt their economies. It should also include, *inter alia*, consideration of the potential positive effects of the implementation of response measures within the scope of the Convention and the Kyoto Protocol. The same participants recalled that compensation was not provided for under the Convention or the Kyoto Protocol.

16. Some participants stressed the need for the identification and analysis of initial actions to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and the impact of the implementation of response measures, including information on the possibility of using insurance and other appropriate mechanisms.

17. Some participants felt that the eleventh sessions of the subsidiary bodies should identify initial priority actions to implement Article 4.9 of the Convention. Such actions, with regard to funding and the transfer of technology, should take full account of the specific needs and special circumstances of the least developed countries. Other participants felt that it was necessary to first explore initial actions to implement Article 4.8 of the Convention.

18. Some participants suggested that workshops to address these issues could be organized by the secretariat as one option for taking the work forward. Some participants pointed out that there was no provision in the budget for 2000-2001 for such a workshop, and that in view of the possibility of other workshops being organized, a consolidated approach to the organization and timing of workshops needed to be taken.

Annex

Agenda for the workshop envisaged in the annex (Programme of work) to decision 5/CP.4 : Implementation of Article 4, paragraphs 8 and 9, of the Convention (decision 3/CP.3 and Articles 2.3 and 3.14 of the Kyoto Protocol)

**21-24 September 1999
Beethovenhalle, Bonn, Germany**

Day 1: Tuesday, 21 September 1999

Afternoon session

- * Introduction and general overview.
Chow Kok Kee, Chairman of the SBSTA
Michael Zammit Cutajar, UNFCCC Executive Secretary
- * Methodologies related to the adverse effects of climate change.
Oswaldo Canziani, Co-Chairman, IPCC Working Group II
Thomas Downing, Programme Leader, Environmental Change Unit, University of Oxford
- * Impact of climate change on countries with arid and semi-arid areas, forested areas, and areas liable to forest decay; and countries with areas liable to drought and desertification.
Dieudonné Goudou, National Environment Council, Niger
Bubu Jallow, Department of Water Resources, Gambia
Discussant: Massimo Candelori, UNCCD secretariat.
- * Impact of climate change on countries with areas prone to natural disasters.
Peter Walker, International Federation of Red Cross and Red Crescent Societies
Max Campos, Comité Regional Recursos Hidraulicos, Costa Rica
Atiq Rahman, Centre for Advanced Studies, Bangladesh

Day 2: Wednesday, 22 September 1999

Morning session

- * Impact of climate change on countries with areas of high urban atmospheric pollution.
Alexander Alusa, UNEP
Discussant: Andrew Githeko, Kenya Medical Research Institute

- * Impact of climate change on countries with low-lying coastal areas.
*Roger McLean, School of Geography and Oceanography,
University of New South Wales, Australia*
Discussant: Manuel Dengo, SIDS
- * Impact of climate change on small island countries.
Graham Sem, Pacific Islands Climate Change Assistance Programme, Samoa
Brian Challenger, Ministry of Public Utilities, Antigua and Barbuda
Discussant: Clifford Mahlung, Meteorological Services, Jamaica

Afternoon session

- * Impact of climate change on countries with areas with fragile ecosystems, including mountainous ecosystems.
Martin Price, University of Oxford, UK
Andrew Githeko, Kenya Medical Research Institute
Discussant: Andreas Fischlin, Institute for Terrestrial Ecology, Switzerland
- * Consideration of the specific needs and special situations of the least developed countries, and land-locked and transit countries.
Mustafa Babiker, MIT Joint Program on the Science and Policy of Global Change, USA
Discussant: Bubu Jallow, Department of Water Resources, Gambia
- * **Panel discussion**
Discussants:
Kiyotaka Akasaka, Deputy Director-General, Ministry of Foreign Affairs, Japan
Mohamed Ould-el-Ghaouth, Counsellor, Ministry of Foreign Affairs, Mauritania
Bernarditas Müller, Department of Foreign Affairs, Philippines
Ole Ploughman, Deputy Permanent Undersecretary of State, Denmark
- * Methodologies related to impacts of response measures.
Bert Metz, Co-Chairman, IPCC Working Group III
John Weyant, Stanford University, USA

Day 3: Thursday, 23 September 1999

Morning session

- * Minimizing adverse effects of the implementation of response measures on international trade, and social, environmental and economic impacts on developing country Parties identified in Article 4.8 and 4.9 of the Convention.
Warwick McKibbin, Australian National University
Houshang Shojania, National Iranian Oil Company

Discussants:

Prodipto Ghosh, Asian Development Bank

John Weyant, Stanford University, USA

- * Minimizing adverse effects of the implementation of response measures on countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products.

Davoud Ghasemzadeh, OPEC

Jonathan Pershing, IEA

Thomas Rutherford, University of Colorado, USA

Discussants:

Mustafa Babiker, MIT Joint Program on the Science and Policy of Global Change, USA

Brian Flannery, Exxon Corporation

Prodipto Ghosh, Asian Development Bank

Afternoon session

- * *(continuation of morning session)*

- * **Panel discussion**

Discussants:

Evelyn Bravo, Ministry of Energy and Mines, Venezuela

Jos Delbeke, European Commission, European Community

Brian Fisher, Bureau of Agricultural and Resource Economics, Australia

Mohammad al-Sabban, Ministry of Petroleum and Mineral Resources, Saudi Arabia

Day 4: Friday, 24 September 1999

- * Conclusions.
