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**THIRD ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL
ON CLIMATE CHANGE**

**SCIENTIFIC, TECHNICAL AND SOCIO-ECONOMIC ASPECTS OF IMPACTS OF, AND
VULNERABILITY AND ADAPTATION TO, CLIMATE CHANGE**

SCIENTIFIC, TECHNICAL AND SOCIO-ECONOMIC ASPECTS OF MITIGATION

**Aspects of the Third Assessment Report that could facilitate
the work of the Conference of the Parties and its subsidiary bodies**

Submissions from Parties

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA), in its consideration of the Third Assessment Report (TAR) of the Intergovernmental Panel on Climate Change (IPCC) at its sixteenth session, identified three preliminary areas which could be considered regularly by the SBSTA: research and systematic observation; scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change; and scientific, technical and socio-economic aspects of mitigation. See document FCCC/SBSTA/2002/6, paragraph 15, for complete texts of these conclusions.
2. The SBSTA invited Parties to submit, by 31 January 2003, their views, for compilation into a miscellaneous document, on issues covered in the conclusions and on the aspects of the TAR that could help facilitate further consideration of the agenda items of the Conference of the Parties and its subsidiary bodies.
3. The secretariat has received seven submissions from Parties. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced* in the language in which they were received and without formal editing.

* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

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PAPER NO. 1: CANADA

**THE THIRD ASSESSMENT REPORT (TAR) OF THE IPCC:
VIEWS ON IMPLICATIONS OF THE TAR FOR THE WORK OF THE COP AND ITS
SUBSIDIARY BODIES (FCCC/SBSTA/2002/6, PARA.15).**

General Comments

Canada welcomes this further opportunity to share views on the implications of the TAR for the work of the CoP and its Subsidiary Bodies, in particular the SBSTA.

It is urgent that Parties respond to the robust findings of the TAR which clearly indicate that current commitments and efforts are not adequate to meet the ultimate objective of the Convention, and highlight the need for a more determined and comprehensive response to climate change, including broader cuts in global GHG emissions, and the importance of adaptation. At the same time, the TAR identifies areas where further global action would improve efforts to reach stabilisation but are not covered by present decisions or agenda items and for which new methodologies and policy frameworks need to be established.

In keeping with SBSTA's mandate to facilitate the exchange of information and to further the development, refinement, improvement and use of comparable methodologies, Canada supports the need to define a work program for the SBSTA to make use of the information and conclusions in the TAR on impacts, adaptation, mitigation, and cross-cutting issues as soon as possible, in the context of meeting the objectives stated in Article 2. Canada looks forward to the adoption of a decision on these matters at CoP9.

Canada would like to refer to its previous submissions on the TAR contained in documents FCCC/SBSTA/2002/MISC.5 and FCCC/SBSTA/2002/MISC.15 and to share additional views, organized under the following sections which deal first with cross-cutting issues relevant to both adaptation and mitigation, second with adaptation and mitigation specific issues, and lastly with the overarching issue of stabilization and risk management.

- Availability of Data and Information
- Socio-Economic Scenarios
- Building Adaptive and Mitigative Capacity
- Mainstreaming Climate Change and Development Policy
- The Costs and Benefits of Climate Policy
- Adaptation and Mitigation Policy Frameworks
- Adaptation and Mitigation Technologies
- Stabilization and Risk Management

Availability of Data and Information

The TAR repeatedly underscores that information is the key driver to reduce uncertainties. Data and information underlie all the methodological work of the SBSTA and comprehensive socio-economic data and information to assess impacts, vulnerability, adaptive and mitigative capacity, and emissions futures are vital input to an effective climate change response. Data and information is also vital for improving precision of climate modelling and impacts and adaptation assessment, which can in turn be used to inform decision-making on climate change.

The SBSTA is in a unique position to collect information through national reporting. The SBSTA should look at methods to assist Parties to produce complete, comparable and compatible data and information.

As a first step, the SBSTA should seek to identify what data and information are needed to help understand environmental and socio-economic factors relevant to climate change at the necessary level of detail. The secretariat should then prepare a report, based on national communications, reviews of national communications, national adaptation plans of actions (NAPAs), and other relevant sources, to assess the data and information available through current reporting and identify additional data and information needed to support the work of the CoP and its SBs.

Socio-Economic Scenarios

The IPCC developed global emissions scenarios (SRES) for use in climate change models assessed in the TAR. However, socio-economic scenarios are as important to understanding vulnerability and adaptation to climate change as climate change scenarios and impact assessments. Analysis of alternative socio-economic futures will help Parties to look at the implications of various development decisions on vulnerability, adaptation and mitigation.

Analysis of vulnerability and adaptation requires scenarios that are dis-aggregated at the local, sectoral, sub-national, national and regional level. For this purpose, downscaling from global scenarios will be impractical. These scenarios should be generated based on in-country data.

For analytical integrity, the assumptions used to generate socio-economic scenarios should be consistent with SRES scenarios. Collaborating to generate socio-economic scenarios at the international level, and use of consistent assumptions in the development of socio-economic scenarios at the regional, national or sectoral levels would make it much easier to compare estimated impacts across countries and sectors and to achieve a more integrated understanding of climate change impacts.

The SBSTA should assess available methods and tools for socio-economic scenario building and facilitate the development and use of comparable methodologies for vulnerability assessment and adaptation planning.

Work is already underway at the IPCC to generate global scenarios for climate impact assessment and at the UNDP to provide tools for socio-economic scenario building at the national level. The SBSTA should invite the IPCC Task Group on Scenarios for Climate and Impacts Assessment (TG CIA) to present its work and explore how this work contributes to vulnerability assessment. The UNDP could be invited to discuss its handbook for Socio-Economic Scenario Development at the planned future workshop on adaptation.

Other roles for the SBSTA would be to facilitate Parties to produce and make available country-level data essential to scenario building, especially for developing countries. The SBSTA could also help to collect and promote consistent and comparable data for both socio-economic and emissions scenarios.

Building Adaptive and Mitigative Capacity

The TAR concludes that understanding adaptive and mitigative capacity is crucial to assess, prioritize and adequately implement adaptation and mitigation options, and that enhancing adaptive and mitigative capacity and removing barriers are important policy responses. The SBSTA needs to take close look at the concepts of adaptive and mitigative capacity put forth in the TAR as a means to better target capacity building efforts, including financial and technological resources. This will include exploring approaches to identify and measure factors that determine adaptive and mitigative capacity. As a first step, the secretariat should prepare a preliminary compilation of potential factors and constraints influencing capacity at the national level, based on a review of national communications.

Canada recalls that it dealt with the issue of adaptive and mitigative capacity at length in its previous submission on the TAR included in document FCCC/SBSTA/2002/MISC.5.

This work is relevant to the Expert Group on Technology Transfer (EGTT) and its work on technology needs assessment and enabling environments. Technology needs are very much tied to socio-economic scenarios and technology needs assessments need to be closely coordinated with vulnerability and adaptive and mitigative capacity assessments. The SBSTA should encourage the integration of needs assessments within overall national adaptation and mitigation policy frameworks.

The SBSTA should provide further guidance through the EGTT to the UNDP as it completes its handbook on methodologies for technology needs assessments so as to ensure the development of the handbook as the appropriate and user-friendly tool for needs assessment.

Building adaptive capacity and reducing vulnerability is useful regardless of anthropogenic climate change because communities continue to be impacted by current weather and climate variability. This can help countries to understand constraints on adaptive capacity despite uncertainties involved with assessing future climate change risks. The SBSTA should encourage the IPCC to provide further assessment of the relationship between adaptation to current climate variability and adaptation to climate change.

The UNFCCC needs to work more closely with inter-governmental bodies that seek to assess and address current weather-related hazards, recognizing that some elements of adaptive capacity are relevant under the UNFCCC and some will go beyond the scope of the Convention.

Mainstreaming Climate Change and Development Policy

There are several reasons why mainstreaming climate policy with development policy should be given higher priority in the SBSTA.

The TAR concludes that climate change policies will influence sustainable development and likewise development choices influence Parties contribution to greenhouse gas emissions and their ability to adapt to the impacts of climate change. The TAR also tells us that adaptation and mitigation strategies will be most effective when integrated into economic and other development plans. Opportunities and barriers within those future plans for reducing or removing GHG emissions and reducing vulnerabilities to climate change provide the link between climate change and sustainable development.

Mainstreaming of climate change policy and development policy targets activities that fulfil other policy objectives but at the same time contribute to addressing climate change. Mainstreaming can entail building on synergies and “no regrets” activities that enable the implementation of climate change policy with limited resources. In this way, mainstreaming is an important response, particularly for developing countries, to the need for building adaptive and mitigative capacity and implementing adaptation and mitigation policies in the context of other urgent priorities such as poverty eradication, education, health care, economic diversification, air quality and sustainable development. Mainstreaming will also contribute to CDM project development, as CDM activities need to be consistent with sustainable development goals.

The SBSTA should consider ways and means to enhance the integration of climate change strategies into other policy frameworks. Building on work on socio-economic scenarios, an important and priority area of work will be to assist Parties to identify policies that could fulfill non-climate policy goals and reduce vulnerabilities to climate change and/or greenhouse gas emissions at the same time. Likewise, increasing multi-sectoral involvement in decision-making will improve capacity and enhance synergies between climate and non-climate policies.

A key focus of the secretariat's work with the secretariats of other multilateral environmental agreements should be to enhance synergies between climate and non-climate policies. The UNFCCC should also cooperate in this regard with inter-governmental organisations such as the OECD, IEA, UNDP, WTO, World Bank dealing with, inter alia, poverty eradication, trade, finance, and development assistance.

The Costs and Benefits of Climate Policy

The TAR states that early action to reduce greenhouse gas emissions will delay and reduce climate change damages and that mitigation efforts sufficient to stabilize atmospheric concentrations of greenhouse gases at lower levels will generate the greatest benefits. However, the TAR also states that there is a lack of information on quantifying and characterizing the benefits of climate policies.

To allow policy makers to more easily compare the costs and benefits of mitigation and adaptation policies, comprehensive and quantitative approaches to estimate incremental benefits associated with different concentrations of greenhouse gases, and ancillary or co-benefits, are needed. This will allow comparison of the costs and benefits of a portfolio of mitigation and adaptation policies at different levels of stabilization and at different points in time - and contribute to a better understanding the best application of adaptation and mitigation policies to manage climate change risks. This information is needed not just at the global level but also at the national and sub-national levels.

The SBSTA has a role to play in identifying gaps in existing information, methods and analyses that inhibit an adequate cost-benefit assessment of climate change policy decisions and to improve the analytical contribution to the policy debate by promoting dialogue between experts of different disciplines.

In assessing many crosscutting issues, the TAR helped to illustrate the importance of an interdisciplinary, integrated approach to solve climate change problems. Recent work on the benefits of climate policy initiated by the OECD illustrates the need for an interdisciplinary approach to understanding and valuing benefits.

The SBSTA should establish a process, for the assessment of climate policy benefits and other issues as appropriate, to bring the scientific, policy-making and other relevant communities together to develop a shared understanding of the issues, and to promote targeted research and modeling to produce comparable results when Parties agree it is necessary to move issues forward. For example, the SBSTA's work on the Brazilian Proposal involved policy-makers in developing the assumptions that go into the running of models. This process helped to clarify policy needs to the research communities, generate comparable results, and helped policy makers to better interpret those results and understand potential limitations.

Adaptation and Mitigation Policy Frameworks

While the TAR identifies many cost-effective/no-regret actions that all countries might take to mitigate and adapt to climate change, it also states that there are a wide range of constraints and challenges that may influence the effectiveness and the cost of their implementation. To date the focus in the SBSTA has been on assessing adaptation and mitigation options, but little has been undertaken on the policy frameworks needed to assess and implement these options at the appropriate national/sub-national/community/sector level.

It is well established in the TAR that adaptation and mitigation strategies will only be effective if consistent with other policy goals. The integration of adaptation and mitigation policy frameworks with such goals is therefore of key importance.

i. Mitigation Policy Frameworks

The SBSTA should explore current best practices in the development of mitigation policy frameworks to provide methods for Parties to synthesize a range of pertinent information and to self-evaluate the suitability and effectiveness of policies and measures to reduce or remove GHGs and identify barriers in the context of their own national circumstances and development plans. The UNDP/GEF work to develop an Adaptation Policy Framework (APF) may provide a useful model for capacity-oriented mitigation policy frameworks to identify opportunities for near-term emissions reductions as well as the institutional and structural changes needed to lead to the enhanced response to climate change necessary in the long-term. Work on adaptation policy frameworks as tools for governments to integrate climate change adaptation planning into other policy domains is advancing, and the same needs to be done for mitigation.

The TAR suggests that alternative emissions pathways may achieve a similar level of stabilization. The SBSTA should encourage the IPCC to assess in more detail the effect of timing of emissions reductions, including inertia in socio-economic systems, and to better account for the potential for reductions in non-CO₂ greenhouse gases and technological developments in the emissions scenarios.

ii. Adaptation Policy Frameworks

An important priority for the SBSTA should be to promote further testing and refinement of comparable methodologies for vulnerability and adaptive capacity assessment and to establish adaptation policy frameworks to be used by Parties in developing their national climate change strategies.

Work on adaptation policy frameworks, which include approaches to vulnerability and adaptive capacity assessment and integrating climate change concerns into medium and long term planning, is advancing and needs to be assessed by the SBSTA. International organizations active in this field should be invited to report on their work at the planned workshop on adaptation, with a view to initiating this assessment.

In keeping with the Delhi ministerial declaration and the need for effective and results-based approaches to adaptation, just as emissions inventories provide a tool to monitor and review progress in GHG emission reductions, a priority for the SBSTA will be to facilitate the reporting of information and development of methods to monitor and review progress in developing and implementing adaptation strategies and to evaluate their effectiveness.

Adaptation and Mitigation Technologies

The SBSTA should continue to provide a forum for further dialogue on the development and evolution of adaptation and mitigation policy and measure options, and should continue to collect and disseminate information on adaptation and mitigation technologies and enabling environments for the transfer of technologies.

Technology is a major driver of emission futures yet little is known about future technological pathways and it has proved difficult to capture them in future scenarios. The SBSTA might contribute to a better understanding of the potentials for technology diffusion by collecting and disseminating information from the Parties on spatial and temporal opportunities and barriers for capital stock turnover. Interactions between sectors are also not well understood and further sharing of information on these and crosscutting issues that are common to a number of sectors, would be very useful.

The TAR suggests that carbon removal and storage may provide a practical, cost-effective and important means to mitigate global GHG emissions. Canada supports the request to the IPCC to explore the issue further, and welcomes the IPCC decision to produce a Special Report on CO₂ Capture and Storage.

Stabilization and Risk Assessment and Management

The TAR tells us about projected climate change impacts associated with various future stabilization levels and the GHG emissions scenarios involved. More information, analysis and research on regional impacts and critical thresholds, the costs and benefits associated with achieving different stabilization levels, socio-economic futures, adaptive and mitigative capacities, technological potentials, and so on, will tell us more, but determining appropriate stabilization levels is likely to take time. In the meantime, the TAR also provides impetus for the SBSTA to improve methods and tools for decision-makers to assess and manage risk.

The TAR illustrates the crosscutting nature of climate change issues, and a risk assessment and management approach is therefore the best means to integrate the many different dimensions. Developing an approach that is robust under uncertainty, for different perspectives of risk, for different decision-making levels, and for varying quantitative and qualitative metrics, will be an important starting point for making use of the data and information currently available to set national and international mid to long-term goals.

An important area of work of the SBSTA will be to synthesise and review existing and ongoing methodological work, including the new work suggested in this submission, for developing and refining overall risk assessment and management frameworks. Adaptation and mitigation policy frameworks incorporating assessment and advancement of crosscutting issues such as data and information, socio-economic futures, adaptive and mitigative capacity, mainstreaming climate change and development policy, and the costs and benefits of climate policy, together should form the basis of a comprehensive climate change risk assessment and management strategy.

Conclusions

At SBSTA17 Parties decided that the TAR should be used as a useful reference for informing the deliberations of the CoP and its subsidiary bodies. Canada therefore recommends that the relevant information in the TAR be a subject of discussion under every CoP and subsidiary body agenda item.

Considerable progress is already being made on the issue of research, and deliberations on the new information in the TAR on impacts, adaptation, mitigation, and cross-cutting issues will likely point out further priority areas in which additional research would most benefit the work of the Convention. These findings will need to be communicated to the scientific community in future sessions of SBSTA Agenda Item on Article 5, Research and Systematic Observation.

As stated above, the TAR identifies areas where further action would improve efforts to reach stabilisation but are not covered by present decisions or agenda items and for which new methodologies and policy frameworks need to be established. Canada's view is that new methodological work arising from consideration of the information and conclusions in the TAR on impacts, adaptation, mitigation, and cross-cutting issues should take place under new or existing agenda items, as appropriate, and that the TAR agenda item should be on-going and focus on risk assessment and management frameworks to synthesise and review this work in the context of Article 2.

PAPER NO. 2: CHINA

**SUBMISSION ON THE THIRD ASSESSMENT REPORT OF THE IPCC AND RELATED
ACTIVITIES FOR THE CONVENTION'S BODIES BY CHINA**

In response to the conclusion of the 16th session of SBSTA (FCCC/SBSTA/2002/6), China puts forward the comments on the Third Assessment Report (TAR) and related activities for the Convention's bodies as following:

A. Research and systemic observation

Presently, many key scientific questions in research and systemic observation of climate change still remain to be solved due to the complicated responses of the earth climate system to natural and anthropogenic forcings. There is still uncertainty in the following key scientific questions.

1. Facts and causes of the past climate change

Important scientific questions to be solved include:

- What changes have happened about global and regional average temperatures, precipitation, and frequency of extreme weather or climate events in the past 100 years, 1000 years or longer period?
- How about the changes in solar radiations, stratospheric volcanic aerosol, tropospheric mineral aerosols and land use/cover during the corresponding periods? How wide is the range of anthropogenic aerosol change?
- What are the causes for the climate change on different time scales, especially the causes for various warm periods?
- How to distinguish the anthropogenic global and regional climate changes from natural climate changes on different time scales? How to scientifically and quantitatively distinguish the effects of natural and anthropogenic factors on global warming in the last century?

In order to improve our understanding of facts and causes of climate change, research and assessment on the following scientific issues should be enhanced in the future.

- Due to the problems with proxy records and data coverage, the exact position of today's climate and predicted future climate in the past 1000 years or longer period is not clear. There is need to further study this issue.
- More attention should be paid to the homogeneity of meteorological data in the analysis of instrumental records. In particular, urbanization (enhanced heat island) effects might have not been removed completely from the current temperature series. There is need to collect and assess data given by scientists from different countries.

- The disparity between surface and upper air temperatures in the last 20-30 years should be also explained more rationally.
- There is lack of reliable time series of solar radiation, natural (volcanic and mineral) and anthropogenic aerosols in the last 100 years or longer period. There is a need to give the time series.
- There is a need to quantitatively determine the range of uncertainty of various models such as energy balance models, global atmosphere-ocean circulation models, global climate system models and regional climate models. Ability of climate models to simulate long-term climate change is considered to be low at present, and their role in studies of climate change detection and attribution will be enhanced only if they are significantly improved.

2. Key processes and feedbacks in climate system

It is important to give more accurate answers especially to the following questions.

- What are the magnitudes and rates of terrestrial and ocean carbon emissions and sequestration on different time scales?
- How to accurately estimate the future change in concentration of the atmospheric greenhouse gases?
- How to best understand the sensitivity of climate system to various forcings including greenhouse gases?
- How to determine net effects of anthropogenic greenhouse gases and aerosols on climate so that comprehensive effects on climate change due to human activities can be assessed?
- How to quantitatively attribute and detect the separate roles of natural and anthropogenic factors in climate change?
- What are the mechanisms for rapid or abrupt climate changes?

Our understanding of these questions is limited and there is a large uncertainty. For example, there is a lack of understanding of the modern processes associated with the biogeochemical cycles of the key earth elements, the response and feedback of clouds and vapor to climate change, the interactions between terrestrial biosphere, ocean, cryosphere, and climate change, and the interactions between elements of climate system in preinstrumental period. Only if substantial progress has been made in these areas, could we be more confident to estimate atmospheric concentrations of greenhouse gases and the sensitivity of the earth climate system.

3. Climate models and the future projection

The following scientific issues need to be further studied and assessed.

- How to reduce the error for estimating magnitudes of radiative forcing due to greenhouse gases and aerosols?
- How to define a reasonable variable or indicator to describe radiative forcing?
- How to develop, test and improve the hierarchy of climate models?
- How to use these models to project future climate change (including regional climate details) probably induced by the increased concentration of atmospheric carbon dioxide, other trace gases, and aerosols?
- How to quantitatively assess and to depict the confidence or uncertainty of such projections and the regional climate scenarios?
- How to use climate models to quantitatively assess possible climate change (cooling or warming, drought or flooding, etc.) induced by greenhouse gases and aerosol emissions from developed countries in the past 200 years?

The-state-of-the-art climate models could not simulate with satisfaction the current patterns and past changes of climate system. There is large uncertainty for the predictions of future climate change. In particular, there is need to substantially improve the simulations of precipitation and extreme weather and climate events. Moreover, uncertainty is obvious in estimating the radiative forcing of greenhouse gases and aerosols. There is less understanding of indirect effects of aerosols and effects of black carbon.

In order to reduce uncertainty of the above key scientific issues, international scientific community needs to carry out observation and research projects based on wide cooperation. Especially, capacity building and participation of scientists from developing countries should be enhanced. The following aspects should be emphasized in the future work.

1. Enhancement of climate system observation

There is a need to further clarify the demand for various observation data that are used in regional (not merely global) climate system models and to specify categories of observation items and detailed standards as soon as possible. It is also important to further improve the capacity building of climate observation in developing countries by providing the necessary funds for enhancing and enlarging observation systems and for rescuing historical data in developing countries.

2. Detection of natural and anthropogenic climate changes

It is important to accurately understand changes of key climate elements during the instrumental period, climate change during the last 1,000 years or even 10,000 years, and the evolution of natural and anthropogenic factors. For the changes during the instrumental period, more attention and quantitative assessment should be given to the urbanization effects on global and regional temperature time series. Marine data set needs to be improved. Improvement of climate models and development of methodology are necessary for the reliable attribution of natural and anthropogenic climate change on various time scales in the past. In particular, the major factors that affect global temperature change in the last 100 years should be scientifically determined.

3. Projection of atmospheric CO₂ concentration and climate system sensitivity

There is need to significantly improve our understanding of biogeochemical and bio-geophysical mechanisms, including understanding of processes and feedbacks of current and past climate changes. Special efforts should be given to:

- Future emissions scenarios of greenhouse gases and aerosols;
- Effects of global marine biological, physical and chemical processes on atmospheric CO₂ concentration;
- Impacts of global and regional land use and terrestrial biosphere on carbon cycle;
- Response and feedback of clouds and vapor to climate change;
- Effects and feedback of aerosols;
- Interactions between terrestrial biosphere, ocean, cryosphere and climate change;
- Interactions between elements of climate system in pre-instrumental period.

4. Development, test, improvement and projection of regional and global climate models

More sophisticated climate system models and regional climate models should be developed. In particular, more active participation of scientists from developing countries in developing global and regional models should be emphasized. Inter-model comparisons and paleo-climate modelling should be encouraged for evaluating the models' performance and modifying the models. Models' ability to simulate regional climate change, the extreme weather and climate events and abrupt climate change has to be enhanced. More robust estimation of global and regional future climate change, including precipitation, frequency of extreme events and possible abrupt climate change, should be given, along with the scientific description of relevant uncertainties.

B. Scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change.

Due to the complexity of climate change impact, relevant research is somewhat weak. There is lack of understanding of the scientific, technical and popularisation aspects of impacts of, and vulnerability and adaptation to, climate change. Many of the weakness remain as follows.

- Uncertainties in climate change impact assessment resulted from uncertainties in the science of climate change;
- Range of uncertainties resulted from impacts of climate change;
- Unclear physical mechanisms in the research of climate change impact;
- Uncovered research on the impacts of extreme climate events and abrupt climate change;
- Imperfect techniques and methods to assess the impact of climate change;
- Difficulty in distinguishing natural factors from non-natural factors of climate change impact. There is need to quantitatively identify effects of climate and non-climate factors, at least, to give assessment on the order of different effects.
- Lack of assessment on the effects of technology improvement on adaptation to climate change;
- Insufficiency in evaluating the capacity and financial needs of adaptation to climate change.

Therefore, it is necessary to strengthen the scientific research and capacity building in the field of climate change impact. The following aspects should be first considered in the ongoing work.

1. To tell from the regional difference in evaluating the impacts of, and vulnerability to, climate change

The impacts of, and vulnerability to, climate change are correlated to the development of society and economy. On contrast to developed countries, the negative effects of climate change are likely to be more serious in developing countries where with the least capacity to adapt are the most vulnerable. The definitions of the impacts of, and vulnerability to, climate change should be established quantitatively and objectively according to different regional circumstances. Nowadays, it is better to pay more attention to the research directly against the regional climate change impact and vulnerability due to their coarse downscaling research.

2. To integrate the assessment of climate change impact

The single result of assessment will easily misadvise decision makers who responsively need the integrated assessment as the assistance in decision making. In modern science filed, the integrated assessment of regional climate change impact across various industries, activities, societies and ecosystems is still in the frail phase and at lower level. The method of integrated assessment is neither developed, nor strengthened, and even without the uniform evaluating criterion and measure. The integrated assessment of climate change on society, environment and economy should be reinforced and those multi-ply ways should be taken to integrate the information and technical projections on cross-cutting fields and subjects. Furthermore, it is necessary to scientifically and comprehensively assess

positive and negative effects of climate change. There is need to explore how to facilitate positive effects and avoid negative effects.

3. To estimate the possible impacts of extreme climate events and sudden climate change

Extreme climate events such as severe droughts, heavy rains and floods, high temperature or even heat wave, low temperature or cold wave, as well as abrupt climate change result in more serious damage to the development of society and economy. Research focus on the impacts of extreme climate events and abrupt climate change should be paid more attention in the future.

4. To quantitatively analyse the adaptability within the wide range of economic development

The difference of climate change vulnerability and adaptability can vary greatly by country at certain economic developing level. The adaptability to climate change should be quantitatively popular for the countries in different economic development stage.

5. To value the additional cost, capital requirement and implementation of the measurement on adaptation to climate change

To the countries, it is an additional burden to take some actions to adapt to climate change, especially to the developing countries. The implementations and potential effects may vary widely under different adapting measurement. The additional cost, capital requirement, implementation and potential impacts of the measurement on adaptation to climate change should be evaluated, particular at the developing countries.

6. To evaluate the operation and possible way to technology transfer against the negative effects of climate change

Technology transfer is undoubtedly good for stronger adaptability to climate change. It will ensure to take the measurement on adaptation to climate change in developing countries. Technology transfer against the negative effects of climate change should be evaluated. The financial analysis should be given based on each possible way.

7. To explore the possibility to set down the international agreements to cope with the climate change impact

Adaptation and mitigation are two equal and important pursuits. The international society has made plenty of efforts on mitigation and signed a series of international agreements such as Kyoto Protocol. Like mitigation, Adaptation needs both efforts from each country and common agreements within all over the world. Therefore, the international agreements against climate change impact should be set down as soon as possible to keep steps on and promote the further actions.

8. To expand the capital amount of climate change adaptation fund

Lack of financial assistance is a major difficulty for the developing country to cope with climate change. The capital amount will limit their adaptabilities. Now the Climate Change Adaptation Fund under Clean Development Mechanism, as one of the three mechanisms of Kyoto Protocol, can not meet the need at all against climate change impact. It is necessary to expand its capital amount, capital source and its aiding field. The Climate Change Adaptation Fund will consequently come into force and provide the enough financial support to developing country.

9. To seek the ways to against climate change through technology improvement

Technology improvement and popularisation are the key issues to cope with climate change impact. Technology backward is a main impediment for developing country against climate change impact. Owing to the huge impacts of, and quite vulnerable capacity in the developing countries to climate change, it is urgent to seek the ways to develop and to transfer the technology among the world. It is necessary to establish the mechanism for transferring and prompting the technology so as to enhance the adaptability for the countries, especially the developing countries.

10. To adapt the climate change via development

With the economy development and technology improvement, climate change comes out as a problem. That is, greenhouse gases, from emission of fossil fuel, result in climate change. The adaptability and vulnerability to climate change has very close relationship with development. The adaptation to climate change should be come into force via development. Correspondingly, development is the core and key method to cope with climate change. Together with environment protection, to seek sustainable development is common understanding and pursuing all over the world, for example, the sign of Kyoto Protocol. Based on some facts, we can conclude that the international society can finally adapt to climate change only via the way to sustainable development.

C. Scientific technical and socio-economic issues on Mitigation of Climate Change

Owing to the complexity of climate change mitigation issues, limitations of existing literature and recent developments after 2001, however, a few shortcomings have emerged in the understanding of scientific, technological and socio-economic issues related to climate change mitigation. In order to avoid misled decisions, adequate attentions should be paid to the issues listed below in the future work on assessment of climate change mitigation.

1. Further and more in-depth understanding of the relationships between climate change and sustainable development

Adaptation to and mitigation of climate change must follow the path of, and aim at sustainable development. In IPCC WG III TAR, chapter one touched upon the issue of sustainable development but did not give adequate analyses on its significance correspondingly. It is necessary to understand the relations how the elements of climate change mitigation, social progress and economic development reinforce (undermine) one another, with particular reference to poverty, water, health, energy, consumption patterns, and research and development. Further research should be undertaken on how to follow the principles of sustainable development in the search of response strategies for climate change in accordance to the practical need of different countries, in particular those of the developing world.

2. Recognition of the importance of economic development for individual, in particular, developing countries, to take climate change response measures

In WGIII TAR assessment, insufficient consideration was given to the fact that economic and social development together with poverty eradication is the first and overriding priority in developing countries. Neither was the basic subsistence and development rights adequately reflected in the estimation of increased emissions, nor the significance of economic growth was properly evaluated for developing countries to take response measures.

3. Full consideration of limited capabilities in the analysis of mitigative capacities in developing countries

There exist large potentials for and many opportunities from climate change mitigation, but all these are directly associated with mitigative capacity. In WGIII TAR, little analysis was made on the differences in mitigative capacity between developed and developing countries. In particular, attentions were rarely given to the practical difficulties for developing countries to have access to technologies and strengthen capacities for mitigation of climate change.

4. Strengthening analyses on the demand for technologies in developing countries and the mechanisms for technology transfer under the UNFCCC

The importance of technology transfer was not fully recognized for developing countries in their implementation of sustainable development and climate change mitigation. Although WGIII completed

the Special Report on Methodological and Technological Issues in Technology Transfer and made some analyses on the barriers to technological progress and technology transfer in the TAR, further work is in need on assessment of the demand for technologies in developing countries and on establishment of effective mechanisms for technology transfer under the UNFCCC. Also, it is necessary to make additional assessment on recent technological developments in areas of climate change mitigation.

5. Adjustment of socio-economic impact analysis on climate change mitigation

Substantial changes have occurred regarding the rationale and credibility of the assumptions made for economic analysis in WGIII TAR. Consequently, the results of the analysis need to be adjusted and validated. On the one hand, developed countries may have dispelled possible negative economic impacts due to relaxation of GHG reduction targets while on the other, developing countries would also need to reassess the likely impacts on their economies associated with the implementation of the relaxed Kyoto targets by developed countries. For instance, the market potential for CDM projects will be shrunk and this change would make the developing countries difficult to realize the expected effects as described in the Protocol. Therefore, there is a need to validate and adjust the results of economic analysis made in the TAR and undertake new and additional analyses. In developing countries, unemployment in urban areas is high in comparison to developed countries, but acceleration of urbanization process in developing countries will add further pressures on employment. It is very likely that climate change mitigation in developing countries would have negative implications for employment. Impact on employment in developing countries was not evaluated in the WGIII TAR and needs to be clearly addressed in the future.

6. Evaluation of the effects from implementation of the Kyoto Protocol

In March 2001, the United States announced that it would not ratify the Kyoto Protocol. The Bonn Political Agreement and the Marrakech Accord allow a substantial increase in use of carbon sinks. All these would considerably rebate the GHG reduction target stipulated in the Kyoto Protocol. What does this mean to the commitment that developed countries would take the lead to GHG reductions? What effective policies and measures have been adopted by developed countries for GHG reductions? What concrete actions have been taken by developed nations? What will be the ultimate effects from implementation of the Kyoto Protocol? All these new issues need to be addressed. The scientific assessment on the effects of the implementation of the Kyoto Protocol should be added in future assessment reports.

7. Energy security for implementing sustainable development in developing countries

There exists a fundamental issue of energy security for developing countries to implement sustainable development and to meet the requirement for basic development. This issue did not receive appropriate treatment in WGIII TAR. Residents in developed countries do not normally use bio-fuels, but majority people in the developing world do not have access to commercial energy. Lack of access to commercial energy by rural people and poor urban residents in developing countries has negative impact on human health and economic development. This issue was not addressed in WGIII TAR but requires full treatment.

8. Ancillary-Benefit

In developing countries, consideration of ancillary-benefits would increase economic feasibility in decision making for climate change mitigation. But this treatment is likely to undermine development as the priority goal. This possible trend was not taken into account in WGIII TAR analysis. For example, climate change mitigation would improve rural air quality, but people in poverty are unlikely to priorities climate change mitigation over economic development. Therefore, the estimation of ancillary-benefit in developing countries should be made in accordance with reality for avoidance of exaggeration.

9. Lack of primary and case studies from developing countries

In WGIII TAR, few analyses originated from developing countries. Research findings from developed countries may not be pertinent to the realities in developing countries. It is very much uncertain whether the research findings from the developed countries can be directly applicable to the developing world. In this regard, it is necessary to strengthen and supplement case analyses on climate change mitigation in developing countries. Towards this end, international community will take the responsibility to provide resources and opportunities encouraging and supporting primary studies by scholars from developing countries. In future IPCC assessment exercises, findings from these primary studies should be reviewed, assessed, and reflected in IPCC reports.

10. Equity issues related to carbon emissions

Due to low levels of per capita GHG emissions, carbon emissions in developing countries are expected to have large increases for implementation of sustainable development. From perspectives of development

rights, basic requirement for living and mitigative capacity, equitable emissions for people in the developing world should be reasonably evaluated. This equity concern was not properly addressed in WGIII TAR.

D. Cross-cutting issues, priorities for work in the near future, and budget and financial issues

1. Strengthening climatic system observations

There is a need to further clarify the demand for various observation data that are used in regional (not merely global) climate system models and to specify categories of observation items and detailed standards as soon as possible. It is also important to further improve the capacity building of climate observation in developing countries by providing the necessary capitals for enhancing and enlarging observation systems and for rescuing historical data in developing countries. In addition, it can be further facilitated to exchange climate system observations, climate models, and the scientific knowledge of climate change by the cooperation between international organizations and countries, various workshops and training courses.

2. Expansion of the fund size and sources for climate change adaptation

Shortage of capital is one of the major difficulties that are faced by developing countries in their response to climate change. Increase of adaptive capacity in developing countries is constrained by availability of capitals. The adaptation fund for climate change from a levy on the proceeds of CDM, one of the three mechanisms under the Kyoto Protocol, is in no way sufficient to meet the need for climate change adaptation. It is therefore necessary that the size of the fund be expanded and activities that can be supported by substantiated, so as to make the fund play a more effective role and provide the needed capital for climate change adaptation in developing countries.

3. Investigation into the possibility for formulation of international agreements for adaptation to climate change

Adaptation to and mitigation of climate change are the two major tasks with equal importance. International community has undertaken substantial amount of work on mitigation and completed a few documents such as the Kyoto Protocol. In a similar fashion to mitigation, adaptation also requires not only the efforts by many countries, but more importantly a global consensus. Therefore, there is an urgency to consider the preparation of international agreements on climate change adaptation.

4. Meaningful support for R & D in developing countries

By means of technological transfer, capacity building and financial assistance, developed nations are appealed to take concrete measures for supporting scientific research and assessment activities in climate and climate change related areas, promoting primary research undertaken by experts in developing countries so that the findings from their studies and assessment can be made consistent with their

national and local realities, and having the research literature well reflected in international journals and documents as well as assessment.

5. Financial arrangement

Budget and financial arrangements should be detailed for the activities as listed above.

PAPER NO. 3: DENMARK, ON BEHALF OF THE EUROPEAN COMMUNITY AND ITS MEMBER STATES AND OF BULGARIA, CROATIA, CZECH REPUBLIC, ESTONIA, HUNGARY, LATVIA, LITHUANIA, POLAND, SLOVAKIA AND SLOVENIA

FURTHER EU VIEWS ON THE CONCLUSIONS OF SBSTA16 WITH RESPECT TO ITS AGENDA ITEM ON THE TAR OF THE IPCC

Denmark, on behalf of the European Union and its member states and Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia, welcomes the progress being made within SBSTA on the scientific issues relating to climate change. This submission has been prepared in response to the request found in FCCC/SBSTA 2002/6 paragraph 15i and addresses the matters raised in conclusions of SBSTA 16 and 17 on the TAR and Research and Systematic Observations.

The EU would like to thank the Secretariat for organising an excellent special side event at COP8/SBSTA17 as requested in paragraph 15g of the conclusions. This event confirmed what the EU had already found on previous occasions, namely the value of having an open dialogue between Parties and experts from the IPCC and international research programmes. The EU would like to thank those that attended for their contribution to the discussions. In accordance with FCCC/SBSTA/2002/L.27 paragraph 7, the EU suggests that there should be further consideration of issues related to climate change and the international research programmes. The EU looks forward to further consideration of documents FCCC/SBSTA/2002/INF.17, FCCC/SBSTA/2002/MISC.15 and Add.1 at SBSTA 18. This should also allow the international research organisations to provide updates on any research that may be forthcoming as a result of the side event at SBSTA 17, and their consideration of these documents.

With regard to further consideration of the TAR discussed in UNFCCC/SBSTA/2002/6 we address the following items:

1. On-going consideration of the TAR in routine work of the Convention (paragraph 15c).
2. Consideration of the scientific, technical and socio-economic aspects of adaptation and mitigation (paragraph 15d ii, iii).
3. An integrated approach to mitigation and adaptation (paragraph 15e).
4. Further work on the ultimate objective (paragraph 15).

1. Routine Consideration of the TAR

Paragraph 15c of document FCCC/SBSTA/2002/6 stated that the “TAR should be used routinely as a useful reference for informing the deliberations on agenda items of the COP and its subsidiary bodies”. The EU suggests that, as a first step, it would be helpful to consider whether any existing agenda items from the COP and the subsidiary bodies would benefit from in depth consideration of the conclusions of the TAR and the Special Reports of the IPCC. Secondly, the TAR and its Synthesis Report should be used to identify policy relevant scientific issues that are not currently on the agenda of the COP or its subsidiary bodies. The EU suggests that two areas requiring further consideration are Aviation, and Transfer of Technology. These are covered in two Special Reports of the TAR. The TAR and the Special reports cover many other issues which should be addressed by the Parties in the future as they arise.

The EU would like to propose how the routine use of the TAR is done in practice, drawing on experience with the LULUCF report of the IPCC. Parties may recall that a special session of SBSTA was devoted to presentations and Q&As. The EU believes that this process greatly helped our deliberations on this subject and suggests that a similar approach could be taken on substantial agenda items that IPCC addresses in some detail in the TAR and Special Reports.

2. New agenda items on Mitigation and Adaptation

SBSTA16 concluded that there should be agenda items on scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to climate change, and scientific, technical and socio-economic aspects of mitigation. These are expected to be on the agenda at SBSTA18. A work programme should be developed that: (a) provides the appropriate agenda and sub-agenda items for discussion at SBSTA; (b) enables relevant information to feed into those items from other agenda items and external sources; and (c) provides the forum by which issues raised during such discussions can be explored further by the SBSTA.

For the adaptation agenda item, the following issues should be included:

1. the projection of regional climate including extreme events and socio-economic change;
2. assessment of impacts and risk, and identification of key vulnerabilities;
3. costs of damages and adaptation;
4. assessment of adaptation options by sector;
5. limits to adaptation;
6. adaptation and sustainable development.

For the mitigation agenda item, the following issues should be included:

1. technological options available to reduce emissions;
2. timing of technological innovation, development and diffusion;
3. costs of mitigation including low/negative costs measures;
4. policies and measures, to include trading mechanisms and fiscal measures;
5. mitigation and sustainable development;
6. ancillary benefits including reduction of air pollution.

The TAR WGII and WGIII reports on Impacts, Adaptation and Vulnerability, and Mitigation, respectively, should be used to inform discussion on these agenda items. A starting point for discussions on these items could be a special side event with invited IPCC experts at SBSTA 18. In addition consideration could also be given to inviting practitioners in the field to report on their practical experience and this would also give the opportunity for Parties to report on their own experiences. As an example, in the field of impacts, adaptation and vulnerability, practitioners could be included from networks related to already existing international disaster preparedness programmes.

3. Integrated approach to mitigation and adaptation

Paragraph 15e of UNFCCC/SBSTA/2002/6 noted that ‘some exploration of an integrated approach to mitigation and adaptation could be useful’.

Mitigation will continue to be essential for our efforts to deal with climate change because it is the precondition for stabilization at any level. Nevertheless the findings of the IPCC demonstrate that because of the timescales and inertia of the climate system it is now not possible to prevent some of the impacts of climate change, and these impacts will require adaptation. It is equally clear that our ability to avoid negative effects from climate change through adaptation is limited.

The work programme discussed above needs to explore the limitations of each of these approaches to tackling the challenge of climate change, and the effects of various combined approaches that could be undertaken. The EU proposes that SBSTA also adopts a separate agenda item that considers this integrated approach to mitigation and adaptation. The EU also asks the Secretariat to arrange a special side event at SBSTA19 on mitigation and adaptation that will help to initiate discussion on the procedure for considering the integrated approach.

The EU believes that a useful discussion of these topics will be possible only if Parties are able to develop informed views on mitigation and adaptation in terms of the levels of climate change that Parties wish to avoid by mitigation, or feel able to tackle with adaptation. This will necessitate some consideration of possible scenarios for stabilisation of greenhouse gases and, subsequently, climate and sea levels, as noted in paragraph 15e of UNFCCC/SBSTA/2002/6.

The EU recalls that the conclusions of SBSTA17 noted that ‘a more coordinated and multidisciplinary approach was needed to address research on cross-cutting issues ... [including] stabilisation of greenhouse gas concentrations’ and believes that Parties should continue to address the concerns raised in paragraph 15e with respect to the ultimate objective of the Convention. The EU therefore proposes that the special side event on an integrated approach to mitigation and adaptation, mentioned above, should also cover the scientific, technical and socio-economic aspects of stabilisation. The event would help to delineate the current state of scientific knowledge in this area and the gaps that need to be addressed. Such an event would inform Parties of the nature of the issues surrounding stabilisation and assist with cross-cutting discussions on mitigation and adaptation.

4. Further work on the ultimate objective of the Convention

The ultimate objective of the Convention commits us to achieving stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, and to do this within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

Paragraph 15e of UNFCCC/SBSTA/2002/6 noted the considerable progress achieved by the TAR in addressing scientific, technical and socio-economic aspects related to the ultimate objective, principles and relevant provisions of the Convention. Developing a shared understanding of these questions will be complex and will take time. The EU believes that discussions within the Convention on these aspects are a requirement for progress towards the ultimate objective and that it is appropriate to begin discussing this in an exploratory way, in conjunction with other work on the TAR, without prematurely prejudging any outcome of these considerations.

PAPER NO. 4: JAPAN

JAPAN'S VIEWS ON THE ASPECTS OF THE TAR THAT COULD HELP FACILITATE FURTHER CONSIDERATION OF THE AGENDA ITEM OF THE COP AND ITS SUBSIDIARY BODIES

Japan welcomes the opportunity to submit its views on the aspects of the TAR that could help facilitate further consideration of the agenda item of the COP and its subsidiary bodies (SBs).

I. Research and systematic observation (FCCC/SBSTA/2002/6, paragraph 15(d)(i))

We welcome the conclusions of the SBSTA17 on research and systematic observation (FCCC/SBSTA/2002/L.27), and appreciate, in particular the following elements of paragraph 7 and 6:

Paragraph 7: The SBSTA decided to regularly consider issues related to research on climate change at its future sessions in order:

- (a) To inform parties about on-going and planned activities of the international and inter-governmental research programmes through periodic briefings
- (b) To provide a forum for consideration of research need and priorities and ways and means for addressing them

Paragraph 6: The SBSTA noted, and decided to consider at future sessions, the need to support endogenous capacity-building for research and systematic observation in developing countries.

At SBSTA17, it was not able to reach conclusions regarding priority areas of research. Japan submitted its views on priority areas of research and questions for the scientific community, which appears in document FCCC/SBSTA/2002/MISC.15, and urges the SBSTA to further consider issues related to priority areas of research that will provide a scientific base for consideration of future global actions to address climate change, and engagement of developing country scientists in climate change research and observation efforts, with a view to recommending a draft decision including these issues to the COP9. For this purpose, the secretariat should invite international and inter-governmental research programmes to present their views regarding priority areas of research, as well as their activities including global observation for climate change studies.

II. Impacts of, vulnerability and adaptation to, and mitigation of climate change (FCCC/SBSTA/2002/6, paragraph 15(d)(ii) and (iii))

Japan believes that climate change should be tackled with the participation of all countries, based on the best available scientific information. The TAR presents important advances in the scientific understanding of climate change and its projected impacts. Japan appreciates the TAR for its comprehensive and balanced capture of the climate change problem. The TAR also contains much information that is essential to the future work of the COP and SBs, including important implications for further policies and measures to address climate change. It has been a practice of the UNFCCC that the Parties have been respectful of scientific findings provided by the IPCC and use such information as a base for formulating and improving the climate change regime and policies. We believe that this practice should be continued so that a set of information contained in the TAR must be carefully examined and fully exploited to support the work of the COP and SBs on further strengthening their efforts towards the achievement of the ultimate objective of the Convention.

It is our firm view that scientific, technical and socio-economic aspects of impacts of, vulnerability and adaptation to, and mitigation of climate change as appeared in the SBSTA conclusions on the TAR

(FCCC/SBSTA/2002/6) should regularly be the agenda items of the COP and SBs, particularly looking at how climate change adaptation and mitigation measures contribute to sustainable development, and at their relevance to future global actions to combat climate change.

In this regard, Japan urges the SBSTA to consider, at its eighteenth session, a recommendation of a draft decision to the COP9, which should include the continuous use of findings and implications in the TAR as a scientific base for the considerations of the COP and SBs regarding future actions to combat climate change. The draft decision should also include the request to the IPCC regarding further elaboration of priority scientific issues identified by the COP in its Fourth Assessment Report due in 2007.

In considering the recommendation on a draft COP9 decision, Japan thinks it particularly important to put high emphasis on the following aspects of the TAR.

1. The TAR concluded that the global-average surface temperature has increased over the 20th century by about 0.60C, and there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities. Without additional measures, the globally averaged surface temperature is projected to increase by 1.4 to 5.80C over the period 1990 to 2100.

It is also a robust finding of the TAR that recent regional climate changes, particularly temperature increases, have already affected many physical and biological systems in many parts of the world. Moreover, projected climate changes during the 21st century have the potential to lead to future large-scale and possibly irreversible changes in Earth systems resulting in impacts at continental and global scales.

Japan thinks all the countries in the world should accept such information in the TAR very seriously, and take immediate actions to combat climate change which is currently occurring and likely to worsen.

2. As reaffirmed in the preamble of “the Delhi Ministerial Declaration on Climate Change and Sustainable Development” adopted at the COP8, the TAR confirms that significant cuts in global emissions will be necessary to meet the ultimate objective of the Convention. This leads to a conclusion that mitigation of greenhouse gas emissions continues to have high priority both in Annex I and non-Annex I countries.

Greenhouse gas stabilization scenarios assessed in the TAR assume that developed countries and countries with economies in transition limit and reduce their greenhouse gas emission first, but emissions from all regions diverge from baseline at some point. That means, in order to stabilize atmospheric greenhouse gas concentrations at some meaningful levels, all regions have to take part in the efforts of emission reduction in the future. Considering the broad range of scenarios assessed in the TAR in which the actual future emission path is likely to lie somewhere within them, both Annex I and non-Annex I countries will need to cut their emissions significantly to meet the ultimate objective of the Convention whatever development paths we follow in the future.

In this regard, Japan believes that global actions to combat climate change are indispensable, and suggests that the COP and SBs initiate a process for considering mitigation actions beyond 2012 based on global participation with a view to seeking further actions towards the ultimate objective of the Convention. Japan thinks that the COP and SBs should promote scientific and technical work which will contribute in continuing development of such future mitigation actions. Details of such scientific and technical work are referred to in the following paragraphs.

3. The TAR indicates that climate mitigation policies may promote sustainable development when they are consistent with broader societal objectives. Some mitigation actions may yield extensive benefits in areas outside of climate change: for example, they may reduce health problems; increase employment; reduce negative environmental impacts like air pollution; protect and enhance forests, soils and watersheds. The effectiveness of climate mitigation policies can be enhanced when the policies are integrated with the non-climate objectives of national and sectorial policy development and be integrated into a broad transition strategy to achieve the long-term social and technological changes required by both sustainable development and climate change mitigation. Since sustainable development is one of the highest priorities for all countries, these findings imply a possibility of “win-win” strategy to achieve climate change abatement and sustainable development. Japan thinks it is a very important and encouraging finding of the TAR, and suggests the COP and SBs further explore various possibilities in this regard.

Unfortunately, current level of knowledge does not allow us to see well-quantified synergies between climate mitigation measures and sustainable development in the TAR. Japan believes that high priority should be given to the implementation of assessments on how a certain mitigation measure or specific technologies can contribute to emissions reduction and sustainable development in both Annex I and non-Annex I countries. This is in line with the suggestions of the TAR on the high priorities for further narrowing gaps between current knowledge and policy-making needs. Such assessment should be conducted using scientific tools including integrated assessment models to explore practical ways to reach both objectives, with broader participation of developing countries.

4. One of the key drivers to promote mitigation policies and measures at the global scale is the development of affordable and economically viable mitigation technologies and the vigorous promotion of their diffusion. Although the TAR appreciates that significant technical progress relevant to greenhouse gas emission reduction has been made since the SAR in 1995 and has been faster than anticipated, further efforts are required to exploit full opportunities of individual technologies and measures to mitigate climate change. Such technologies and measures should include mitigation and prevention technologies such as separation, recovery, sequestration and utilization of carbon and greenhouse gases, and renewable and alternative energy technologies, resources and products, as well as energy efficiency.

In addition to emission reduction technologies, protection and enhancement of sinks and reservoirs should also be appreciated as a priority mitigation option and consideration should be given to how to promote such activities. In fact, the TAR indicates that forest, agricultural lands, and other terrestrial ecosystems offer significant carbon mitigation potential, and the estimated global potential of biological mitigation options is in the order of 100GtC (cumulative) by 2050. In addition, biological mitigation options, if implemented appropriately, may have social, economic and environmental ancillary benefits beyond reductions in atmospheric carbon dioxide including biodiversity, watershed protection, and sustainable land management.

Promotion of mitigation technology development and diffusion requires various actions including the removal of many barriers that prevent the full exploitation of mitigation options. As the TAR indicated, most countries could benefit from innovative financing and institutional reform and removing barriers to trade. Japan suggests that the COP and SBs consider the various possibilities in this regard.

5. Adaptation to the adverse effects of climate change is also of high priority for all countries, as stated in the Delhi Ministerial Declaration. The TAR insists that adaptation is necessary, given that climate changes and related impacts are already occurring, and that adaptation can complement mitigation as a cost-effective strategy to reduce climate change risks. Therefore, urgent attention and action are required on adaptation as a complement to mitigation. More knowledge is required concerning

the adverse effects of climate change at the regional and national level including the projected cost of damages.

In addition, adaptation actions are important in the context of sustainable development. The TAR also states that mitigation and adaptation actions can, if appropriately designed, advance sustainable development.

6. Japan believes that international flexible mechanisms such as the Kyoto mechanisms are essential to realize effective and cost-efficient reductions in greenhouse gas emissions. The models reviewed in the TAR show that the Kyoto mechanisms are important in controlling risks of high costs in given countries. Similarly, they can minimize risks of inequitable international impacts and help to level marginal costs. The TAR also suggests that coordinated actions among countries and sectors may help to reduce mitigation cost, address competitiveness concerns, potential conflicts with international trade rules, and carbon leakage.

Japan suggests that the COP and SBs consider how flexible market-based mechanisms can be made more comprehensive and viable in order to secure more efficient and effective worldwide reductions in greenhouse gases. In facilitating the important flexibility mechanisms, the COP and SBs must fully make use of information in the TAR.

7. The TAR provides new scientific information and evidence as an input for policymakers in their determination of what constitutes “dangerous anthropogenic interference with the climate system.” This decision requires value judgment based on sound science, and comprehensive and integrated investigations to support the judgment are being conducted and enhanced throughout the scientific community.

Nevertheless, we should recognize that a set of scientific information enabling the complete quantification of the ultimate objective might not be obtained in the near future. Under this circumstance, Japan thinks it important to explore practical approaches enabling to make the best policy decisions to address climate change under certain level of uncertainty, without postponing necessary measures due to this uncertainty. Japan suggests that the COP and SBs take such approach in considering future climate abatement actions.

This approach is supported by the TAR stating that climate change decision-making is essentially a sequential process under general uncertainty, and the TAR confirms that earlier actions, including a portfolio of emissions mitigation, technology development and reduction of scientific uncertainty, increase flexibility in moving towards stabilization of atmospheric concentrations of greenhouse gases.

8. Although formulating a common rule on further action against climate change, in which all countries including developed and developing countries can participate, will be a great challenge, Japan believes that it could be realized through coordinated and dedicated effort of international community. Japan is willing to associate itself with this endeavor, and take the lead toward this end.

The TAR indicates that any international regime can be designed in a way that enhances both its efficiency and its equity. It is also encouraging that the literature assessed in the TAR on coalition formation in international regimes presents different strategies that support these objectives, including how to make it more attractive to join a regime through appropriate distribution of efforts and provision of incentives.

Japan suggests that the COP and SBs carefully examine such information in the TAR in considering the future international regime to combat climate change beyond 2012, which enables global participation and contributes to achieving the ultimate goal of the Convention.

9. Japan believes that in order for developing countries to consider their own future climate change policies, enhancement of scientific and institutional capacity building enabling them to do so is decisively important. Although developing countries are thought to be most vulnerable to climate change, far less information is available concerning developing countries. Therefore, it is of utmost importance to have participation of developing countries in such activities as global observations through the Integrated Global Observing Strategy (IGOS), assessments of climate change impacts, risks and vulnerabilities. It is also important particularly for developing countries to have capacity building in the areas of mitigation and adaptation so as to integrate climate change to the sustainable development strategy. Much work is required including by the COP and SBs in this regard.

Japan has been assisting developing countries in enhancing their capacity to address climate change, and is committed to continuing its utmost efforts in various ways including through the “Environmental Conservation Initiative for Sustainable Development (ECoISD)”, “Asia CDM Capacity Building”, “Scientific Capacity Building for Sustainable Development in Developing Countries”, “Enhancement of Regional Strategy on Climate Change through AP-Net” and relevant WSSD Type2 Partnership Initiatives.

10. The TAR stated that differences in the distribution of technological, natural and financial resources among and within nations and regions, and between generations, as well as differences in mitigation costs, are often key considerations in the analysis of climate change mitigation options. Japan thinks estimating a reliable database on such national circumstances of each country is extremely important in providing a basis for any consideration of climate change actions, therefore, the COP and SBs should continue to consider ways of ensuring the submission of national communications as well as the comparability of data.

PAPER 5: NEW ZEALAND

On aspects of the Third Assessment Report of the IPCC (TAR) that could help facilitate further work by the COP and its subsidiary bodies

This submission is in response to FCCC/SBSTA 2002/6 paragraph 15i. New Zealand welcomes this further opportunity to share its views regarding the relevance of the IPCC Third Assessment Report (TAR), consisting of the 3 Working Group (WG) reports and the Synthesis Report (SYR), for the work of the Convention and Bodies under the Convention. New Zealand would like to take this opportunity to thank the IPCC for the timely production of these important documents, and to thank the large number of international experts who have contributed to writing and review of the reports.

Integration of TAR into existing agenda items

New Zealand believes that it is important that the Bodies under the Convention incorporate the findings of the TAR and Special Reports by the IPCC into its existing agenda items. The TAR has a high and specific relevance to a wide range of existing agenda items of SBSTA, SBI and the COP, and those agenda items should regularly and routinely consider the TAR and other IPCC reports in their deliberations.

The following Table 1 lists the agenda items of the COP and its subsidiary bodies for which, in the view of New Zealand, information contained in the TAR could facilitate further consideration of those agenda items.

New Zealand believes that the COP and its subsidiary bodies should establish a process by which the TAR can be regularly considered within existing agenda items, to ensure the scientific information provided by the IPCC is integrated into considerations and decisions. We suggest that regular Q&A events, provision of relevant summaries of applicable sections of IPCC reports jointly through the Secretariats of UNFCCC and IPCC with the help of IPCC Convening Lead Authors, and regular briefings on specific items by IPCC Lead Authors could greatly assist the work of the SBSTA, SBI and COP.

Table 1. List of agenda items of COP, SBSTA and SBI for which the TAR contains directly relevant scientific information that should be routinely considered within those agenda items.

Agenda item	TAR key subjects	TAR reference
COP: Adequacy of commitments under Article 4.2 (a) and (b) of the Convention	Stabilisation of greenhouse gas concentrations; inertia; vulnerability to climate change and reasons for concern; adaptation to climate change in the context of Sustainable Development and equity; global sustainability and climate change mitigation; technological and economic potential of greenhouse gas emission reduction	SYR Q4, 5, 6, 7; WGI 3, 4, 6, 7, 9, 11; WGII 19; WGIII 1, 2, 3, 10
COP: Implementation of Article 4.8 and 4.9 of the Convention	Vulnerability to climate change and reasons for concern; changes in extremes of weather and climate; global, regional, national and sectoral costs and ancillary benefits of mitigation	SYR Q6, 7, 8; WGI 9, 10; WGII 10-17, 18, 19; WGIII 8, 9

<p>SBSTA: Education, training and awareness</p>	<p>Robust findings and key uncertainties regarding attribution of climate change and future projections; benefits of anticipatory action on adaptation and mitigation; links between climate change and other environmental issues, and synergies in developing response options; barriers, opportunities and market potential of technologies and practices; decision-making frameworks for mitigation and adaptation strategies</p>	<p>SYR Q1, 6, 7, 8, 9; WGI 1, 14; WGII 2, 18, 19; WGIII 5, 7, 10</p>
<p>SBSTA: “Good practices” in policies and measures among Parties included in Annex I to the Convention</p>	<p>Synergies between responses to climate change and other environmental problems; benefits of anticipatory action on mitigation; barriers, opportunities and market potential of technologies and practices; mitigation policies, measures and instruments; costing methodologies; global, regional, national and sectoral costs and ancillary benefits of mitigation; decision-making frameworks;</p>	<p>SYR Q7, 8, 9; WGIII 5, 6, 7, 8, 9, 10</p>
<p>SBSTA: Cooperation with relevant international organisations</p>	<p>Links between climate change and other environmental issues, and synergies in developing response options; international and sectoral spill-overs from mitigation strategies</p>	<p>SYR Q8; WGIII 8, 9</p>
<p>SBSTA: Research and systematic observations</p>	<p>Actions needed to advance our understanding of climate change science; remaining uncertainties in the attribution of climate change, including internal climate variability and estimates of response patterns; robust findings and key uncertainties regarding attribution of climate change and future projections; regional climate modelling; methods and tools for assessing vulnerability and identifying climate change impacts, and developing and applying scenarios; technological and economic potential of greenhouse gas emission reductions and options to enhance, manage and maintain biological or geological carbon storage reservoirs; data and information required for the use of adaptation and mitigation decision-making frameworks; differences in assumptions and estimates arising from different costing methodologies; risk assessment approaches for anticipatory adaptation</p>	<p>SYR Q2, 3, 4, 5, 6, 7, 8, 9; WGI 2, 5, 10, 11, 12, 13, 14; WGII 2, 3, 8, 19; WGIII 3, 4, 7, 8, 9</p>
<p>SBSTA: Relationship between efforts to protect the stratospheric ozone layer and efforts to safeguard the climate system</p>	<p>Links between climate change and stratospheric ozone depletion; radiative forcing of climate change; atmospheric chemistry and greenhouse gases; physical climate processes and feedbacks; effects of climate change and stratospheric ozone depletion on ultraviolet radiation levels at the Earth’s surface, and its impacts on human health, crops, ecosystems, and the polar regions; technological and economic potential of greenhouse gas emission reductions; sector costs and ancillary benefits; decision-making frameworks</p>	<p>SYR Q8; WGI 1, 4, 6, 7; WGII 1, 3, 5, 9, 16; WGIII 3, 9, 10</p>

<p>SBSTA: Development and transfer of technologies</p>	<p>Enhancing adaptive capacity and related funding issues; regional differences in technological and economic potential of greenhouse gas emission reductions and biological and geological carbon storage reservoirs; barriers, opportunities and market potential of mitigation technologies and practices</p>	<p>SYR Q1, 6, 7, 8; WGII 1, 2, 3, 8, 18; WGIII 3, 4, 5</p>
<p>SBSTA: Scientific and methodological assessment of contributions to climate change (“Proposal by Brazil”)</p>	<p>Historical emissions and future emission projections; observed changes in climate; projections of future climate change; physical climate processes and feedbacks; decision-making frameworks; vulnerability to climate change and adaptation; equity and sustainability considerations of adaptation and mitigation; global, regional, national and sectoral costs and ancillary benefits of mitigation</p>	<p>SYR Q1, 2, 3, 6, 7; WGI 1-9, 11, 12; WGII 2, 18; WGIII 10</p>
<p>SBI: National Communications from Parties included and from those not included in Annex I of the Convention</p>	<p>National Communications contain information that could benefit from being presented in the context of information contained in the TAR, specifically relating to: Scientific research activities and gaps in understanding regarding regionally relevant climate processes, impacts, and mitigation options; enhancing adaptive capacity and issues related to funding for adaptation; costing methodologies for climate change impacts risk assessment and mitigation options; decision-making frameworks related to anticipatory adaptation and mitigation; national assessments of technological and economic potential of greenhouse gas emission reductions and biological and geological carbon storage reservoirs; national assessments of barriers, opportunities and market potential of mitigation technologies and practices; national and sectoral costs and ancillary benefits of mitigation; mitigation policies, measures and instruments; links between climate change and other environmental issues, and synergies in developing responses at a national or intergovernmental level</p>	<p>SYR Q1-8; WGI 2, 10, 13, 14; WGII 1-9, 18, 19; WGIII 3-10</p>
<p>SBI: Capacity building</p>	<p>Enhancing adaptive capacity; links between climate change and other environmental problems, and synergies of options to address those; links between climate change adaptation and mitigation and Sustainable Development; methods and tools to build climate change impact scenarios and anticipatory adaptation; global distribution of regional impacts of climate change; technological and economic potential of greenhouse gas emission reductions and biological and geological carbon storage reservoirs; barriers, opportunities and market potential of mitigation technologies and practices; global, regional, national and sectoral costs and ancillary benefits of mitigation; benefits of leapfrogging of technology to avoid lock-in of greenhouse gas intensive technologies; decision-making frameworks for adaptation and mitigation</p>	<p>SYR Q1, 6, 7, 8; WGI 10, 14; WGII 10, 11, 14, 15, 16, 17, 18; WGIII 3, 4, 5, 8, 9, 10</p>

SBI: Financial mechanism	Need to arrest the decline of the observational network related to climate information; issues related to funding for adaptation; cost estimates of autonomous and anticipatory adaptation; relationship between Mitigation Costs and Development, Equity, and Sustainability; spill-over effects of mitigation activities by Annex I countries on a regional or sectoral basis; regional differences in technological and economic potential of greenhouse gas emission reductions and biological and geological carbon storage reservoirs; barriers, opportunities and market potential of technologies and practices	SYR Q1, 8; WGI 14; WGII 1, 8, 10, 11, 14, 15, 16, 17, 18; WGIII 3-9
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New SBSTA work items arising from findings of the TAR

- 1) The TAR clearly demonstrates that Sustainable Development cannot occur in the absence of both mitigation and adaptation to climate change, and that climate change strategies and Sustainable Development can be mutually reinforcing. The SBSTA should therefore initiate work to encourage the integration of mitigation and adaptation with wider objectives of Sustainable Development, including assessments of adaptive and mitigative capacity, and policies and measures to enhance those, in the context of national circumstances and national or regional development plans.
- 2) The TAR contains significant information on the impact of various stabilisation levels of greenhouse gases on Earth systems such as glaciers, ice sheets and permafrost regions, including impacts occurring over very long time scales in excess of one thousand years. While there is still substantial uncertainty over the levels of greenhouse gas concentrations that would lead to a given global average warming, the TAR has identified some links for which more robust statements can be made, or can be expected to be made by the time of the Fourth Assessment Report (such as irreversible melting of the Greenland Ice Sheet over several thousand years, likely at a stabilisation level of 550ppm). The SBSTA should initiate a regular discussion of the implications of such impacts on various regions and the world as a whole, to enable it to move forward in assessing what greenhouse gas concentrations and rate of climate change might be called “dangerous” in the context of Article 2 of the Convention, and to develop a decision-making framework that might enable Parties to facilitate agreement on desirable maximum levels of greenhouse gas concentrations.
- 3) The TAR outlined a range of cost-benefit estimation techniques applicable to adaptation and/or mitigation, including those that account for non-market goods and environmental services. These techniques form vital ingredients for developing relevant risk assessment and risk management tools to enable rational decision-making. The SBSTA should initiate its own work programme to make use of existing risk assessment and risk management tools and techniques, and aid the development of such tools and techniques, that will benefit Parties to assess and compare their adaptation and/or mitigation options and capacity at a national or project level.

PAPER NO. 6: SWITZERLAND

THIRD ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

1. Role of the UNFCCC in matters of research and systematic observation

Switzerland considers that the UNFCCC, through the appropriate COPs decisions should : 1) Identify research needs in the field of climate change and encourage the scientific community to conduct the necessary research in this field. 2) Identify needs in the field of systematic observation and alert the Parties and the relevant organisations to remedy the situation. 3) Request from the IPCC, as appropriate, assessments of current knowledge on climate change, its impacts and options for mitigation and adaptation. For these functions, the UNFCCC should encourage Parties to make available the necessary funds.

2. Relationships with research organisations

Scientific research in climate change covers a wide number of scientific questions and is a vast domain to which numerous research institutions contribute. The Convention and its SBSTA should not aim at establishing contact with every single institution working in matters of climate change. This would be not efficient for at least two reasons : lack of time for and impossibility to assess the value of the results of the research of each institution. Therefore the existing practice of requesting the IPCC to undertake assessments of current knowledge shall prevail.

3. Relationships with observing organisations

Together with climate research, systematic observation of weather and climatic events has to be encouraged by the UNFCCC. Here too, the UNFCCC should avoid establishing contact with individual institutions. This for the reason that most of this work is done at the national level by the meteorological institutes.

4. Relationships with the IPCC

The UNFCCC has to privilege its relationship with the IPCC as its first provider of scientific information. The UNFCCC has to request from the IPCC assessments on research on and systematic observation of all aspects of climate change carried out by the scientific community. Maintaining the high scientific reputation and the independence of the IPCC has to be an outmost priority of the UNFCCC.

5. Areas where the IPCC TAR can help the UNFCCC's process

Of course, routine consideration of the findings of the IPCC TAR has to take place for each of the agenda items dealt with by the UNFCCC and its subsidiary bodies. We recommend that the Secretariat, in preparing the annotated agendas and other documents, refer explicitly, as appropriate, to the IPCC TAR or other IPCC documents dealing with each of the agenda items.

We consider that the discussions in SBSTA on these matters that have already take place have been very useful. A synthesis prepared by the Secretariat of the views expressed by the Parties is contained in document FCCC/SBSTA/2002/INF.17 and covers practically all aspects dealt with by the IPCC TAR (science, impacts, vulnerability assessment, adaptation, mitigation and cross-cutting issues).

At this stage, we think that further action can take the following course : elaboration by the Secretariat, in consultation with the relevant research and systematic observation organisations, of a catalogue of the current major research programmes on climate change. On the basis of such compilation, the SBSTA could analyse how these research programmes respond to the needs identified by the IPCC and by the UNFCCC. The Convention could, after considering this catalogue and related recommendations of the SBSTA, provide the research community with its priorities and

could commend research programmes and programmes for systematic observation to Parties for funding. This catalogue should be based on the proposals for further research and systematic observation contained in the IPCC TAR and completed on the basis of the priorities indicated by Parties. The elaboration of this catalogue responds to the decision of the SBSTA at its seventeenth session expressed in paragraph 45 (g) (ii) and (iii) to consider research needs and to communicate these needs and priorities to the scientific community.

PAPER NO. 7: UNITED STATES OF AMERICA

VIEWS ON THE THIRD ASSESSMENT REPORT

The Seventeenth Session of the Subsidiary Body for Scientific and Technical Advice in June 2002 (SBSTA-17) invited Parties to submit their views “on issues covered in these conclusions and on the aspects of the TAR that could help facilitate further consideration of the agenda items of the COP and its subsidiary bodies.” The United States welcomes the opportunity to provide views on aspects of the TAR highlighted by SBSTA-17, the work of the SBSTA, as reflected in FCCC/SBSTA/2002/6.

Introduction

We believe that the most useful focus for discussion of the TAR at the June 2003 SBSTA session would be the manner in which the issues identified in SBSTA/2002/6 might be incorporated into the SBSTA’s future work. SBSTA/2002/6 calls for further consideration of identified issues with a view to recommending a decision to the Conference of the Parties at its ninth session; if appropriate, new emphases for SBSTA’s work could be reflected in such a decision. As a general matter, we believe that the SBSTA’s work over the coming period should reflect priorities outlined in Delhi Ministerial Declaration.

The United States notes that the preliminary areas identified in paragraph 4 of the SBSTA conclusions on this matter (FCCC/SBSTA/2002/6) correspond to the three volumes of the TAR, and therefore encompass a very broad range of scientific and technical issues. Much work is already occurring that relates to those areas, throughout the agenda items of the Convention bodies. However, the Third Assessment Report and the Delhi Declaration together suggest opportunities for new points of emphasis within these areas. We suggest several that we consider to be of particular relevance to the work of the SBSTA, and then consider implications for the workload of the SBSTA and SBI.

Research and Systematic Observation

The United States believes that discussion at SBSTA-17 under the renewed agenda item on “Research and Systematic Observations” was useful, and it is clear that a strong focus on research will be critical to reducing uncertainties essential to informed decision making.

To the extent that significant uncertainties remain, UNFCCC decision-making will necessarily be driven to a greater extent by values that Parties bring to the table. There are legitimate and substantial differences in national perspectives on climate change, and the value of scientific research is that it can help to bridge and reduce differences among Parties with respect to the nature and timing of policy responses. The Convention can play a valuable role by highlighting research needs for policy makers, so that adequate focus and resources are brought to bear.

Global Observing System – It is clear from SBSTA-17 conclusions that there are significant concerns regarding the state of the climate observing system. The issuance of the Second Adequacy Report for GCOS offers a significant opportunity at COP-9 to engage ministers and senior officials on the importance of a robust monitoring system in order to achieve greater consensus regarding Parties’ actions over time.

Scientific, Technical and Socioeconomic Aspects of Adaptation

The Delhi Declaration emphasized the need for increased attention to adaptation in the Convention's deliberations, and the United States strongly supports this increased emphasis.

A consideration of adaptation issues was one of two major elements of the Working Group II Report of the TAR. This report contains much information of use to the Parties, and is relevant for much work that is already underway. Many aspects of adaptation were addressed in decision 5/CP.7 on articles 4.8/4.9

It is the view of the United States that adaptation and vulnerability, as an analytical matter, are inseparable, and that future SBSTA work on adaptation will need to take into account vulnerability as part of its consideration.

We believe that the SBSTA can do more to promote cooperation among the Parties to better prepare for adaptation to the impacts of climate change. We believe it would be appropriate to initiate a standing agenda item to help promote and facilitate the exchange of information toward effective planning and response measures.

Countries and regions will differ substantially with respect to national circumstances, and the work of the SBSTA will need to reflect this fact. All countries are likely to engage in a process of consideration of adaptation, and we would consider the experiences gained by different countries to be of relevance to all Parties to the Convention. We believe a focus on national and sub-national planning processes in key issue-areas would be a useful way to initiate consideration of this set of issues. We believe the SBSTA could exchange information for several issue-areas, covering, inter alia, the following types of questions:

- What are experiences and conditions in different countries with development planning at the national and sub-national levels?
- How is planning for climate change similar or distinct from planning for other considerations (e.g., demographics, economic development patterns)?
- What experiences do countries have in incorporating climate impacts into adaptation strategies?
- What techniques and technologies are most useful?
- Do experiences with planning for other forms of social and environmental change suggest appropriate approaches/good practice/priorities?
- What are the strengths and weaknesses of existing adaptation-relevant data and their utility in national planning?
- What conditions stimulate or constrain adaptation and what is the role of non-climatic factors in adaptation choices/decision-making?
- What is the process of adaptation decision-making at various decision-making levels in countries?

Scientific, Technical and Socioeconomic Aspects of Mitigation

This topic corresponds to the Working Group III report, and aspects of its work are relevant for a broad range of existing work undertaken by the Parties. As with other elements of the TAR, Parties will draw their own conclusions from its findings and surely reflect them in their deliberations of this ongoing work.

The United States considers that the Convention is now in a period of implementation. Most countries, including the United States, are currently putting into place the mechanisms at the national level that they will need to fulfill their commitments in addressing climate change.

In light of this and of the outcome of COP-8, the United States believes it is appropriate that the UNFCCC's deliberations relating to mitigation continue to focus on promotion and facilitation of information exchange on technical aspects of climate change mitigation. In the past, the Convention has considered aspects of mitigation in particular under the rubric of an agenda item on policies and measures. We suggest that this work could be broadened to include three new areas of focus for such work:

1) Promoting research, development and diffusion of technologies to address climate change: To date, the UNFCCC has focused primarily on regulatory and fiscal measures for addressing climate change. However, in order to meet the needs of the future in a cost effective manner, key technologies will need to be developed and disseminated to reduce emissions in all the key sectors.

We suggest that the SBSTA could take up this issue, with a focus on information exchange regarding measures designed to spur technologies, including effective national R, D&D measures. The purpose of such an exercise would be to help inform those in the UNFCCC process about this component of the climate change response. The Parties could examine issues associated with the rate of diffusion of key technologies.

2) Climate change and sustainable development: The TAR, the UNFCCC, and the Delhi Declaration, all recognize that meeting the challenge of climate change is only one of a number of social, economic and environmental objectives that countries are seeking to meet simultaneously in pursuit of the long-term welfare of their citizens and countries. The SBSTA could begin looking at actions that countries could take to achieve local and regional benefits while also addressing climate objectives. We believe this also would be in the context of information facilitation.

3) Future work on aerosols. It is increasingly clear that addressing aerosols can and should be an important component of an overall climate change mitigation strategy, with considerable co-benefits for human health and the environment. The UNFCCC could begin to look at effective actions for addressing aerosols in the context of its work on policies and measures.

Organizational Considerations

As noted above, the preliminary areas identified in FCCC/SBSTA/2002/6 are reflected in a number of current agenda items in both the SBSTA and SBI. The work of the Subsidiary Bodies is likely to increase substantially with the establishment of the Meeting of the Parties under the Kyoto Protocol, with increasing difficulties in managing the process for individual delegations. The Chairs of SBSTA and SBI will need to work carefully to minimize overlapping or duplicative efforts in different agenda items. We offer the following suggestions in this regard.

With respect to adaptation, we note that a number of aspects of the SBI agenda item on Article 4.8/4.9 deal with scientific, technical and socio-economic aspects of adaptation. As a general matter, we believe that such aspects should be dealt with under SBSTA to the extent that they involve adaptation considerations.

We consider that work on mitigation might best be handled under the existing agenda item on policies and measures. The mandate for this work might need to be adjusted accordingly.

The TAR agenda item has been useful as a way of initiating consideration of the issues in the TAR. However, given the broad nature of the TAR, we do not see the need for a standing agenda item on the TAR itself. When the Fourth Assessment Report is issued, we believe that it would be appropriate to establish a similar agenda item to consider its findings.