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**SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE**

**Twentieth session**

**Bonn, 16–25 June 2004**

**Item 7 of the provisional agenda**

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

**Item 8 of the provisional agenda**

**Scientific, technical and socio-economic aspects of mitigation**

## **Sustainable development, opportunities and solutions, vulnerability and risk**

### **Submissions from Parties**

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA), at its nineteenth session, completed its work under the Third Assessment Report (TAR) agenda item. Two new agenda items are to be initiated at its twentieth session, for regular consideration by the SBSTA, as follows:
  - (a) Scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change;
  - (b) Scientific, technical and socio-economic aspects of mitigation.
2. The SBSTA, at its nineteenth session, noted that the themes of, inter alia, sustainable development, opportunities and solutions, and vulnerability and risk, are relevant for consideration under the two new agenda items. The SBSTA invited Parties to submit to the secretariat, by 15 March 2004, their views on these themes, and other information relating to these agenda items, for compilation into miscellaneous documents.
3. The secretariat has received eight such submissions. Almost all submissions include views relating both to impacts of, and vulnerability and adaptation to, climate change, and to mitigation; therefore submissions on both agenda items are included in a single miscellaneous document. Document FCCC/SBSTA/2004/MISC.7 is therefore cancelled. 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.

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**FCCC/SBSTA/2004/MISC.6**

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PAPER NO. 1: AUSTRALIA

**Submission by Australia**

**Scientific, technical and socio-economic aspects of mitigation; and  
Scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to  
climate change**

The Nineteenth Session of the Subsidiary Body for Scientific and Technological Advice noted that the themes of sustainable development, opportunities and solutions, and vulnerability and risk, are relevant for consideration under the two agenda items. The SBSTA invited Parties to submit their views on these themes, and other information relating to these two new agenda items. The Secretariat was requested to organise a workshop to begin to explore these themes on each of the new agenda items during its twentieth session.

Australia welcomes the opportunity to provide views on these themes, and other information, that may be of use to the Chair of SBSTA when organising the workshops for SBSTA 20. Australia will address both new agenda items in this submission.

In October 2003 Australia submitted to the SBSTA views on the elements, scope and priorities of the work to be undertaken under the proposed new agenda items (document *FCCC/SBSTA/2003/MISC.2*). Australia believes that the priorities identified in that submission are important areas for exploration under these agenda items.

Operation of Workshops

As identified in *FCCC/SBSTA/2003/L.26/Add.1*, the aim of the work under these two new agenda items should be to focus on exchanging information and sharing experiences and views among Parties on practical opportunities and solutions to facilitate the implementation of the Convention. It would be useful to build on the open exchange of information that occurred during the COP 9 pre-session consultations on the Third Assessment Report, held from 27-28 November 2003.

Recognising that many Parties will be represented by the same delegates for both agenda items, Australia proposes that the workshops on adaptation and mitigation not be run concurrently during SBSTA. In place of contact groups, Australia suggests up to two full days of workshops on each agenda item spread over the first week of SBSTA 20, perhaps with a morning session on each agenda item run on consecutive days. It may be useful to have initial sessions of the workshops a few days prior to the commencement of SBSTA to commence discussions in an informal and open atmosphere.

The final session for each agenda item could include an opportunity for the Chair to present a summary. Australia suggests that these summaries contain an accurate reflection of workshop results, without attempting to reach negotiated conclusions.

*FCCC/SBSTA/2003/L.26/Add.1* requested SBSTA to report on its work under these two new agenda items to the Conference of the Parties at its eleventh session. Australia suggests that the Chairs' summaries from the workshops held during SBSTA 20, and from any subsequent workshops on these agenda items before COP 11, form the basis of this report.

Topics for Discussion Under Agenda Items

Using workshops as a format for addressing these agenda items is a useful means for exploring the scientific, technical and socio-economic aspects of adaptation and mitigation. In order to progress

discussion it may be useful to focus each workshop on one or two topics under the themes identified by SBSTA for each of the agenda items. To decide which topics to focus on at each SBSTA meeting, it would be useful for the SBSTA to again invite Parties to submit their views, perhaps prior to SBSTA 22, on topics to be discussed.

The topics for discussion at the workshops at SBSTA 20 could include:

Adaptation:

- Stocktake of current international scientific information about the impacts of climate change, including gaps, to assist identify adaptation needs.
- Sharing of experiences in developing national adaptation policy frameworks.

Mitigation:

- Discussion of examples of effective technology cooperation on climate change that supports the goals of promoting sustainable development.
- Tools to assess capacities and barriers in implementing mitigation strategies.

To ensure best use of the available time, minimise duplication and identify synergies, it would be helpful to enable sharing of information between the two workshops. Linkages could be identified by each workshop, and time set aside in one or both of the workshops to discuss these, with delegates from the other workshop invited to participate in the discussion.

Further detail on these topics can be found in Australia's October 2003 submission on the elements, scope and priorities of the work to be undertaken under the new agenda items (document *FCCC/SBSTA/2003/MISC.2*).

Australia is open to discussing a range of topics at the workshops as our focus is on exchanging information and sharing experiences and views among Parties on practical opportunities and solutions to facilitate the implementation of the Convention.

#### Participation

Australia suggests inviting both government and non-government representatives, including from industry, research bodies, local government, international organisations, to participate in the workshops. This approach would enhance information sharing and bring a greater range of perspectives to the discussions.

It would also be important to take advantage of the information exchanges (conferences, workshops and papers) that are occurring outside the UNFCCC, involving a variety of international organisations engaged in climate change research, projects, policy and planning.

#### Format of the Workshops

Australia suggests that the format of the workshops follow that of the COP 9 pre-sessional consultations on the Third Assessment Report. A panel of representatives from Parties and non-government organisations would be invited to present on the topics selected by the Chair of the SBSTA for each agenda item to be discussed at that workshop. A general discussion would follow on the issues raised by the panel and other issues relevant to the topic of discussion.

PAPER NO. 2: CANADA

**Submission by the Government of Canada**

**Views on the scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change, and the scientific, technical and socio-economic aspects of mitigation**

**March 29, 2004**

Canada commends the Secretariat for its organization of the pre-session consultations held prior to the Nineteenth Session of the Subsidiary Body for Scientific and Technological Advice, SBSTA19. Those consultations drew attention to a number of challenges associated with adapting to and mitigating climate change. It was encouraging to hear more about the numerous efforts underway to find practical solutions to these challenges, from the local to the international levels. Given the value of these sessions, Canada welcomes Decision -/CP 9 (FCCC/SBSTA/2003/L.26/Add.1) requesting the SBSTA to initiate work on two new agenda items on adaptation and mitigation as referenced above, and to “focus on exchanging information and sharing experiences and views among Parties on practical opportunities and solutions to facilitate the implementation of the Convention”.

Canada also welcomes the opportunity to share views on the themes of, “inter alia, sustainable development, opportunities and solutions, and vulnerability and risk”, and other information relating to these agenda items, and understands that these views will be taken into account by the Chair of the SBSTA in preparing for the workshops to take place on each of the new agenda items during its twentieth session. The organization of workshops to exchange information is essential to the SBSTA’s ability to effectively carry out its work under the new agenda items, and is consistent with the importance the UNFCCC places on understanding respective national circumstances and capabilities. It could be particularly useful as Parties implement their current commitments and consider any future efforts they may wish to undertake - all Parties should be encouraged to participate in this exchange.

In our view, notwithstanding the substantive differences between adaptation and mitigation, it is important that the work on these two agenda items proceed in tandem. There is much to be learned from sharing information on both adaptation and mitigation, as both will be a challenge to all nations. Moreover, we see value in periodic discussion/comparison of issues raised under the mitigation and the adaptation agenda items, in order to identify any synergies between the two that may exist.

**Workshop Logistics/Objectives**

Canada believes that the information workshops should promote awareness of the range of expertise, activities and opportunities, both within and outside of the UNFCCC, relevant to issues raised by Parties. We therefore support a sharing of views at all levels from the local to the international, and would encourage the participation of relevant local, regional and international organizations, donor and development agencies, NGOs, financial institutions and other practitioners as appropriate. This broad spectrum should be reflected in the list of experts invited to participate.

The length of the sessions should provide sufficient opportunity for all Parties wishing to do so to share their experience as well as provide ample opportunity for representatives of the Parties to interact with invited experts. To facilitate participation, and for budgetary reasons, the workshops should be held in conjunction with the regular SB sessions.

Canada also would welcome the opportunity to share our experience and expertise in addressing climate change, both as regards adaptation and mitigation, with our UNFCCC colleagues. We would be happy to do so at the upcoming workshops.

## **Specific Elements of Work Related to Scientific, Technical and Socio-economic Aspects of Impacts of, and Vulnerability and Adaptation to, Climate Change**

Canada would like to put forward the following views on work elements to broadly address the above-noted themes "...and other information relating to these agenda items" in relation to adaptation.

### Vulnerabilities and Risks

Work in this area could facilitate the sharing of experience, approaches, methodologies and the potential development of best practices for conducting national and local/regional vulnerability assessments. Attention could be focused on how to define and assess adaptive capacity in light of national circumstances.

### Adaptation and Sustainable Development

An examination of the needs of decision-makers at the local/municipal scale and the methods and tools that are most helpful for planning to adapt to a changing climate at that scale would be useful. This could include the areas of infrastructure, emergency planning, land-use planning, integration of adaptation with sustainable development principles and other topics as applicable.

SBSTA could target the key area of climate and water resources. The impact of climate change on water resources will be most evident in such areas as agriculture, drinking water, fisheries, hydroelectricity, transportation, and ecosystems. Exploration of this theme would illustrate the importance of the many linkages that need to be considered in sustainable development of water resources and underscore the importance of integrating climate change adaptation into planning.

### Opportunities and Solutions

It would be valuable to examine current adaptation activities, frameworks, policies and measures in place (or under development) in different countries. Equally valuable would be the consideration and assessment of how adaptation compares or fits with other economic and social development goals, policies and priorities in different national contexts.

In addition, work in this area could include an examination of approaches to assessing the effectiveness of adaptation activities (existing and planned), including the use of indicators. Particular consideration could be given to how to apply assessment criteria across different national circumstances.

## **Specific Elements of Work Related to Scientific, Technical and Socio-economic Aspects of Mitigation**

Canada would like to put forward the following views on work elements to broadly address the above-noted themes "...and other information relating to these agenda items" in relation to mitigation. The areas mentioned below have strong linkages to the themes of "sustainable development" and "opportunities and solutions".

### Mitigation Technology

Technologies will play an increasingly important role in mitigation efforts and will enhance mitigative capacity. Increased effort in technology research and development to complement existing efforts at technology promotion both within and outside the UNFCCC process is needed. These efforts should pave the way for the breakthroughs necessary to significantly reduce greenhouse gas emissions in the longer term and meet the ultimate objective of the Convention, while fostering sustainable development.

It would be useful to exchange information both on incentives and barriers to the development, deployment and dissemination of advanced technologies, including demand-side emissions management. Options that contribute to promoting the dissemination of existing technologies as well as options that contribute to future long-term technology development and diffusion are relevant in this regard.

### Mitigative Capacity

A country's ability to take meaningful action on climate change, in a cost-effective manner, depends substantially on its ability to adopt mitigation measures. An examination and exchange of views and experience on national circumstances or other related factors affecting mitigative capacity would be very helpful.

This area of work could focus on capacity issues arising from the implementation of a range of climate change policies and measures, and in the monitoring and reporting of greenhouse gas emissions. It also could take into consideration the nature of a country's industrial base and its relationship to the global economy.

### Mitigation Measures

An authoritative assessment of the costs and benefits of mitigation must take into consideration how mitigation measures can contribute to sustainable development and unleash opportunities. It would be helpful to exchange information on known ancillary benefits of mitigation, or win-win scenarios, that may arise in the implementation of both domestic and international cooperative mitigation measures. In this regard, a case-study approach would be useful, showcasing realized benefits of such measures through practical experience. Such studies could focus on specific sectors such as electricity generation.

PAPER NO. 3: CHINA

**Views submitted by China on the themes of sustainable development, opportunities and solutions, and vulnerability and risk and other information under the new agenda item of Scientific, Technical and Socio-Economic Aspects of Impacts of, and Vulnerability and Adaptation to Climate Change**

In response to the conclusion of the 19th session of SBSTA (FCCC/SBSTA/2003/L.26), China puts forward the views on the themes of sustainable development, opportunities and solutions, and vulnerability and risk and other information under the new agenda item of Scientific, Technical and Socio-Economic Aspects of Impacts of, and Vulnerability and Adaptation to Climate Change as following:

**1. Sustainable development**

Adaptation will promote to achieve the goal of sustainable development. The less developed world would be affected more seriously by climate change. Therefore, economic and social development in developing countries, including the research and development of advanced technologies and their application and diffusion, would be a solution to address impact of climate change, and would enhance the capability of adaptation. SBSTA should take this point into full account when it considers this agenda item.

**2. Vulnerability and risk**

Developing countries are more vulnerable than developed countries due to weak economic and technological capability, and will be much riskier. The extreme climate events, including floods, hot wave or cold wave, would lead to more vulnerabilities and risks. Better adaptation to such climate change and its impact would reduce vulnerability and risk. SBSTA should consider actions and measures to promote the research and development of methodologies and technologies for adaptation so as to find solutions to address this theme.

**3. Financial assistance and technology transfer**

SBSTA should consider recommending to SBI to take decisions on how to promote the developed countries to provide financial assistance and technology transfer to developing countries for addressing the impact of, and adaptation to climate change, in accordance with the relevant provisions of UNFCCC and its Protocol, as well as the decisions made by COPs.

**4. Uncertainty and decision-making**

It is recognized that there is still great uncertainty on climate change, and therefore, the impact assessment of climate change may have larger uncertainty, which will lead to the difficulty to make decision on adaptation. Therefore, it should be the top priority of SBSTA to promote the research and development of the analysis tools, methodologies and technologies, including the integrated assessment, on climate change impacts, in particular the regional impacts of climate change, draw sound conclusions and provide strong evidence for decision-making. Without the sound and certain assessment on climate change and its impact, it would be extremely difficult to make decisions and take actions on adaptation measures.



**5. Research and development of adaptation technologies**

SBSTA may consider to define the adaptation technology, and to formulate the inventory of adaptation technologies. On this basis, SBSTA should promote the development of advanced adaptation technologies and promote adaptation technology transfer from developed countries to developing countries.

**6. Adaptation capability and experiences**

Developing countries have much fewer adaptation capabilities than developed countries. SBSTA should promote the analysis on adaptation capabilities and adaptation experiences of different countries, aiming at sharing relevant information and experiences among Parties.

**7. Organization of Workshop**

The workshop should be organized in such a way as to allow participants of both developed and developing countries to share their views, knowledge, expertise and information on the themes mentioned above, and identify the gaps on methodologies, tools and technologies on the impact of, and adaptation to climate change. China is interested in participating in the workshop.

PAPER NO. 4: IRELAND ON BEHALF OF THE EUROPEAN COMMUNITY  
AND ITS MEMBER STATES

**SUBMISSION BY IRELAND ON BEHALF OF THE EUROPEAN COMMUNITY AND ITS  
MEMBER STATES**

**This submission is also supported by the following Acceding States and Candidate Countries:  
Estonia, Hungary, Latvia, Malta, Poland, Slovenia, Bulgaria, Romania,  
and also by Croatia**

**Dublin, 19 March 2004**

**Views on the scientific, technical and socio-economic aspects of impacts of, and vulnerability and  
adaptation to climate change and of mitigation**

**1 Introduction**

The EU welcomes the opportunity to express its views on the themes that are relevant for consideration under the new agenda items at SBSTA20 and on other related information as requested in the conclusions of SBSTA19 (FCCC/SBSTA/2003/L.26). The EU also wishes to express its appreciation of the work carried out by the secretariat in relation to the pre-sessional workshops for SBSTA19. These provide a useful basis for informing the development of these new agenda items.

The conclusions of SBSTA19 identified that the themes of, inter alia, sustainable development, opportunities and solutions, vulnerability and risk, are relevant for consideration under both agenda items. In responding to FCCC/SBSTA/2003/L.26 the EU has provided a single submission covering both agenda items. This reflects the view of the EU that the issues being considered under these agenda items are intrinsically linked through these themes and that this linkage should be further developed through the work-programmes for the new agenda items.

In order to elucidate this view, the EU submission first focuses on the background and context for the agenda items, before consideration of the themes and contents for both work programmes.

**2 Background and Context**

The EU recognises that the continuing increase of atmospheric greenhouse gas (GHG) levels and the resultant enhancement of the natural greenhouse effect constitutes a potentially dangerous interference with the climate system.

The establishment of the new SBSTA agenda items on scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to climate change, and mitigation of climate change could contribute to enabling Parties to further develop understanding of issues relevant to Article 2 of the Convention. e.g., in relation to stabilisation of atmospheric greenhouse gas concentrations, natural adaptation of ecosystems, ensuring food production is not threatened and enabling sustainable economic development. The IPCC Third Assessment Report (TAR) should provide the basic scientific information for the development of these agenda items.

**2.1 Agenda item on scientific, technical and socio-economic aspects of impacts of, and vulnerability  
and adaptation to, climate change**

This agenda item should deal with the issues of impacts, vulnerability and risk and the challenges of adaptation. It will contribute to the exchange of information that can assist Parties in the assessment of local and global vulnerability and risk e.g. in relation to water supply, food production, ecosystems, and

abrupt climate change and thereby contribute to their understanding of what could constitute dangerous interference with the climate system.

It is recognised that climate change is already happening and certain impacts can no longer be prevented, therefore adaptation to these impacts is necessary. Climate change related damages may be costly, and costs will grow as temperatures rise. The benefits of planned appropriate adaptation actions, will help reduce damage costs, and are likely to outweigh the costs of inaction. Inaction or inappropriate adaptation actions are also likely to entail large economic costs as well as human, environmental and cultural costs.

The loss of life, economic damage and destruction of heritage caused by recent extreme events in Europe, including heat waves and floods, also show that developed regions will find adaptation to climate change challenging. Adaptation will be even more difficult for Developing Countries and Least Developed Countries with higher vulnerability and less adaptive capacity.

It is also recognised that there are physical and economic limits to adaptation. For example, physical limits in the case of small island states facing sea-level rise, and economic limits in the case of cities and towns built on low lying coastal areas or permafrost. Therefore mitigation is the first stage in reducing climate impacts, and thus adaptation costs.

## **2.2 Agenda item on scientific, technical and socio-economic aspects of mitigation of climate change**

The aim of the work under this agenda item should be to enable Parties to identify opportunities and practical solutions to the challenges of mitigation. The basis for this work is analyses of emissions scenarios, pathways, stabilisation levels i.e. those used for impacts projections, and analysis of options and potentials for mitigation actions. Potentials for reduction of vulnerability and risk and costs in relation to impacts and adaptation actions being addressed in both agenda items is seen as a key cross-cutting issue.

Enabling sustainable economic development and understanding of the drivers that can promote the diffusion of existing and the development of cleaner, low carbon technologies are also key components of this agenda item. Timescales and linkages between short, medium mitigation options and the long-term objective are important elements of this work.

## **3. Approaches to the workshop in relation to the further development of these agenda items**

The EU proposes that the workshop at SBSTA 20 should consider a number of questions related to the themes agreed at SBSTA 19 with respect to mitigation, and impacts of, and vulnerability and adaptation to climate change as shown in Table 1 and that these can be used for the further development of these agenda items.

The EU would like the secretariat to invite experts from IPCC, international organisations, practitioners and national governments to address these questions to facilitate information exchange, build capacity and to help develop a longer-term work programme for SBSTA. This would build on the COP-9 pre-sessional, which provided valuable insights for the operation of these agenda items. It is considered that National Communications and National Adaptation Plans of Action could also provide useful information in relation to actions in these areas. Emissions scenarios analyses produced by the IPCC are fundamental for both agenda items. The information contained in the TAR should continue to be the starting point for projections.

With respect to the theme of risks and vulnerability, it will be important to review different perspectives, both national and international, on the risks and vulnerabilities associated with different emission scenarios and their adaptive requirements, including how these may be reduced under mitigation scenarios. Assessments of current management of extreme events can provide practical insights on

impact management. The experiences of practitioners will also be key for analyses of practical solutions and opportunities, in relation to win-win technologies, ancillary benefits, and investment/development opportunities. This theme can also explore adaptive risks and the benefits of different mitigation options in terms of reduced risk and reduced damage costs.

The theme of sustainable development provides the opportunity to put climate change in a wider context particularly with the prospect for ancillary benefits. Climate change forms an integral part of the sustainable development agenda given the multiple ways it affects societies and interacts with place-specific vulnerabilities.

In the context of the theme of opportunities and solutions, work under this agenda item should focus on analyses of mitigation and adaptation options, the costs involved and ancillary benefits that may accrue. This should help Parties to focus on the opportunities and solutions, including specific technologies, local/regional potentials and investment options. The analyses should include identification of drivers for overcoming institutional, social and other barriers to the introduction of mitigation and adaptation options as well as capacity requirements and options for capacity development. Such analyses should be coupled with knowledge already gained by practitioners in developing local and regional mitigation and adaptation actions. The development and linkage of short, medium, and long-term mitigation strategies should also be part of this analysis.

The EU considers that the analytical work being undertaken under these SBSTA agenda items is distinct from the operational focus of the consideration under relevant SBI agenda items.

**Table 1, Questions for the SBSTA 20 new agenda items and suggestions how the themes for the new agenda items may be addressed via; scientific, technical and socio-economic analyses**

	<b>Mitigation, What has the IPCC said? What have Parties done for this?</b>	<b>Impacts of, Vulnerability and Adaptation to climate change. What has the IPCC said? What have Parties done for this?</b>
Themes	Specific issues	Specific issues
Vulnerability & Risk	For different climate change/stabilisation scenarios, what are global regional local benefits of different mitigation options in terms of reducing risk and vulnerability? What are the implications of inertia and uncertainties within the climate and socio-economic systems for timing of mitigation measures?	For different change/stabilisation scenarios, what are global, regional and local perceptions of vulnerability, impact, damage costs, and risk for society and environment e.g. in relation to extreme events, (e.g. floods, droughts, storms) and abrupt climate change. What are the possibilities for reduction of vulnerabilities and risks? What are possibilities for, and limits to, adaptation?
Sustainable development	What are the benefits & opportunities for different mitigation scenarios in terms of delivering sustainable development goals? How can sustainable development policies contribute to reductions of GHG emissions?	What are the risks for reaching sustainable development goals under different climate change scenarios? How can sustainable development policies reduce risk and vulnerability to climate change and contribute to adaptation?
Solution & opportunities	What are the options for emission reduction i.e. in relation to technologies and policies? What are the costs and benefits, including ancillary benefits, win-win options, and investment opportunities, with respect to mitigation? How can long-term economic investment risk be reduced? What are the opportunities for significant emissions cuts at different time scales? How can barriers to emission reductions be overcome? What are the methodological issues to be used in assessing costs?	What are the options for adaptation i.e. in relation to technologies and policies? What are the costs and benefits, including ancillary benefits, win-win options, with respect to adaptation? What are the different approaches to adaptation and decision making frameworks? How can long-term investments risks be reduced through adaptation? What are the opportunities for adaptation for different time scales How can barriers to adaptation be overcome? What are the methodological issues to be used in assessing costs including non-monetary costs?

PAPER NO. 5: MALAYSIA

**Submission by Malaysia**

**Submission on the themes and other information relating to the two new agenda items formed from the Third Assessment Report of the Intergovernmental Panel on Climate Change**

The nineteenth session of the Subsidiary Bodies for Scientific and Technical Advice noted that the themes, *inter alia*, sustainable development, opportunities and solutions and vulnerability and risk, are relevant for consideration under the two new agenda items (a) Scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change and (b) Scientific, technical and socio-economic aspects of mitigation and invited Parties to submit their views on these items. Malaysia welcomes this opportunity to provide further views on these two new agenda items.

Malaysia would like to reemphasize that the scope of the work of the two new agenda items must remain within the mandate of COP 9 decision, i.e. the two new agenda items should focus on *exchanging* information and sharing experiences and views among Parties on practical opportunities and solutions to facilitate the implementation of the Convention. This exchange should promote understanding of the scientific, technical and socio-economic impacts of climate change and response measures at the same time in recognition that the definition of sustainable development should be country driven.

Malaysia would also like to emphasize that research and development remains an important and top priority task as there are still many uncertainties in the development of global and regional climate scenarios and the consequential interpretation of impacts and vulnerability as well as the identification of adaptation and mitigation response requirements. Priority should be given to the exchange of information and practical experiences among Parties as well as the scientific communities with a view to enhance the understanding of the science related to climate and climate change, response measures required as well as reduction of uncertainties. Consideration of these issues shall also include practical, cost effective approaches to adaptation and mitigation, methodologies and tools to narrow uncertainties and the development of reliable impact and vulnerability assessments. For research and development in these areas to be effective and beneficial, in particular in developing countries, it is necessary for developed country Parties to promote, facilitate and finance, as appropriate, the transfer of and/or access to environmentally sound technologies and know-how as well as capacity building in such areas for developing country Parties. Hence, exchange of information on these issues is important.

Reliable and robust information on impacts, vulnerability, adaptation and mitigation are also crucial in order that Parties are able to decide on the most cost effective measures to address the impacts of climate change. Continuous, coordinated exchange on the latest information including national needs and *experiences*, regional cooperation programmes and their effectiveness as well as indigenous knowledge relevant to climate change would greatly enhance the understanding of the issues and contribute towards effectiveness of the negotiation process. The discussion can explore ways on how a clearing house mechanism on these two agenda items under the UNFCCC umbrella can be operationalised and harmonized with the other agenda items that facilitate and enhance information sharing benefiting all Parties .

Exchange of information and experiences under the two new agenda items could initially focus on a few important *items* and areas and be expanded as the agenda items develop. The agenda items should avoid duplication with other agenda items under deliberation by SBSTA and SBI.

**(a) Scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change**

For adaptation, the exchange of information and experiences on climate change for sustainable development could *inter alia* focus on important areas emphasized in the New Delhi Ministerial Declaration. The exchange of information in these areas could include scientific understanding, technology and technical know-how availability, transfer and diffusion opportunities for technical know-how and technology, endogenous technology development opportunities, capacity building and funding opportunities under bilateral and multilateral international cooperation. In particular, the exchange could center on opportunities and solutions in helping developing countries build resilience to adapt to the adverse impacts of climate change.

(i) Economic diversification opportunities: On the socio-economic aspects, it should also promote the exchange of views and explore opportunities for economic diversification to adapt to the adverse impacts of climate change and policies and measures.

**(b) Scientific, technical and socio-economic aspects of mitigation**

For mitigation, the exchange of information and experiences on climate change for sustainable development could *inter alia* initially focus on energy. The exchange of information could include:

(i) Technology development, transfer and diffusion: This includes technical know-how and technology availability, opportunities for transfer and diffusion, endogenous technology development and funding under bilateral and multilateral international cooperation as well as enhancing opportunities offered under the implementation of the Kyoto flexible mechanisms.

(ii) Security and reliability of energy supply. Sustainable development in the energy sector is a pivotal factor for economic competitiveness and progress. Therefore, continued security and reliability of energy supply remains top priority. The agenda item can be used to exchange views on the issue of energy security and reliability including giving the assurance that countries shall not be deprived of their most competitive use of energy resources and that climate mitigation measures shall not create barriers for appropriate energy investments.

(iii) Self-sufficiency of energy sector development: Effective transfer of appropriate energy technologies will enable the developing world to manufacture affordable energy technologies that harnesses unique, domestic energy resources such as renewable energy and possibly, to diffuse such energy technologies. Appropriate and adequate levels of technology transfer would assist in addressing the self-sufficiency challenges in the developing world. Both technical and financial assistance from developed countries as widely enunciated under the UNFCCC are important enabling factors. The agenda item should discuss the effectiveness of technology transfer in relation to mitigation.

(iv) Exchange of information on effective options for mitigation: This should include the exchange of information on costs factors and socio-economic scenarios that reduces the per-capita gap between developed and developing country Parties. Measures to minimize the negative spillover effects of mitigation policies and measures on developing countries should also be discussed.

PAPER NO. 6: NEW ZEALAND

**Submission by New Zealand, 15 March 2004**

**Themes and modalities for work under the two new agenda items on impacts, vulnerability and adaptation to climate change; and mitigation of climate change**

**Introduction**

This submission is in response to FCCC/ SBSTA/ 2003/ L26, paragraph 4. New Zealand welcomes this further opportunity to share its views regarding the themes to be explored in the two new agenda items on the scientific, technical and socio-economic aspects of impacts, vulnerability and adaptation, and mitigation. Our submission includes suggestions for modalities and other sources of information that will be relevant to SBSTA's work.

**Modalities for work and approach to content for the new agenda items**

The Conference of the Parties at its 9<sup>th</sup> session requested the SBSTA to "focus in its work on adaptation and mitigation on exchanging information and sharing experiences and views among Parties on practical opportunities and solutions to facilitate the implementation of the Convention". Consistent with this focus, New Zealand sees the main purpose of these two new agenda items, initially, to build confidence amongst Parties, and to increase the interaction of SBSTA with practitioners that can help Parties to understand and develop options to meet the objectives of the Convention, without initially attempting to reach negotiated conclusions on specific topics or issues.

With this in mind, we suggest the extensive use of in-session events (workshops, roundtables, open fora, presentations) including stakeholders and practitioners at the intergovernmental, regional, local government, private and NGO level. In-session events would allow all Parties to attend and participate fully, and to cover a wide range of topics without overloading Parties with inter-sessional activity. The in-session events could use 2 days of pre-sessional activity at each SBSTA meeting, and use times that otherwise would be used for negotiations in Contact Groups and informal consultations. Despite being embedded in and forming part of SBSTA meetings, New Zealand strongly believes that these events should have an informal nature that allows the free and productive sharing of a wide range of experiences and views by all participants.

It would be useful for SBSTA20 to agree on the concept of a routine schedule of in-session events up to SBSTA23 when a report-back to COP11 will be required. However, New Zealand believes that the work programme of the two new agenda items will need to further evolve over time in response to lessons learnt and interests of the Parties, and we would therefore not like to see any prescriptive definition by SBSTA of the specific contents or modalities of the work programme at this stage. Specific topics and theme areas for events should be decided by SBSTA from session to session in response to lessons learnt and equitable coverage of interests of Parties, with the aim of touching on all major themes and topic areas by the time SBSTA will need to report back to COP11.

**Themes to be explored under the two new agenda items**

New Zealand agrees that the themes of sustainable development, opportunities and solutions, and vulnerability and risk, should form important elements of the work of SBSTA on the two new agenda items on adaptation and mitigation. A previous submission by New Zealand has already listed a number of specific topics and actions that we believe would generally help SBSTA to explore those themes in the context of implementing the objectives of the Convention. We therefore do not reiterate in detail those specific topics and actions and their rationale, but refer back to our original submission contained in FCCC/ SBSTA/ 2003/ Misc.11.



***Agenda item on impacts, vulnerability, and adaptation***

New Zealand believes that initially, the themes of sustainable development, and opportunities and solutions, could be best explored by events that allow the sharing of views and experiences amongst Parties, stakeholders and regional decision-makers. These events should include presentations by local and regional NGOs and local government initiatives, and should incorporate information on:

- integrating consideration of climate change effects into development plans and strategies, and business practices,
- balancing long-term adaptation strategies with short-term and urgent issues and solutions,
- experiences with cultural, institutional and technological capacity and barriers,
- prioritisation and integration of climate-change specific work in the context of other environmental and social pressures, and
- benefits, costs and residual risks from early and proactive adaptation, and comparing those costs to alternative responses of autonomous adaptation and no adaptation.

The theme of vulnerability and risk in the agenda item on adaptation should initially include events where Parties, regional stakeholders and NGOs can informally share their views on regional key vulnerabilities that are likely to be outside coping capacity even when adaptation is included. This discussion should include consideration of the probabilities of the occurrence of related key impacts, and the time frames over which they could occur. New Zealand would also like to see an informal discussion of experiences and models on how to maximise beneficial effects of climate change as well as reduce the risk from negative effects. We also believe that events on the possible effects of climate change on the global financial risk management sector would be of interest and benefit to Parties.

This agenda item should also make wide use of parallel work and related experiences at the regional and country level, including results from the first round of NAPAs, and case study experiences from projects sponsored by organisations such as the OECD, World Bank, Asia Development Bank, UNDP, as well as regional organisations and country-specific activities. Presentations from these bodies should focus on lessons learnt, experiences with barriers as well as enabling policy environments, and the engagement of stakeholders and local decision-makers and implementers of adaptation practice.

***Agenda item on mitigation***

New Zealand believes that the theme of sustainable development and mitigation would be best explored by an initial series of events that involve Parties, modelling experts, industry representatives, and regional NGOs, and that include presentations and discussions on:

- integration of no-regrets mitigation options into regional development plans including economic and social cost-benefit analysis over a range of different time frames,
- currently available technology choices for emission-intensive industries and their effect on future emissions from those sectors through investment lock-in, and options and experiences with influencing such choices,
- regional emission projections and their sustainability in the context of various greenhouse gas stabilisation scenarios that have been evaluated by the IPCC,
- relationships between emissions, consumption, and technologies, for a range of different sectors and goods,
- inducing behavioural change at the institutional, community and individual level.

The theme on opportunities and solutions would be best started through events with a strong presence by industry and NGO representatives that share their experiences with implementing national, regional and global mitigation activities, including institutional and policy barriers, enabling policy environments, and capacity in the government and private sector.

The theme of vulnerability and risk in mitigation may be initially explored through events that focus on current investment strategies in the energy, agriculture and forestry sectors, and the consequences of

those strategies on near- and long-term greenhouse gas emissions. Such events should look at the consequences of resulting projected emission trends in the context of possible greenhouse gas stabilisation levels, and the role of hedging strategies to manage scientific and socio-economic uncertainties without foreclosing long-term options. It would also be useful in this context to explore the near- and long-term costs of such hedging strategies at the regional and national level, and to compare those costs to business-as-usual development and more rapid departures from projected development paths at a later stage. Consideration of the possible cross-border effects of mitigation policies, and the magnitude of such effects relative to other pressures and policy choices over a range of time-scales, may also be explored under this theme.

PAPER NO. 7: SAUDI ARABIA

**Saudi submission on  
“Scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to climate change”**

Saudi Arabia would like to thank the UNFCCC Secretariat for the successful preparation of the pre-session Consultations on the TAR of the IPCC on 27-28 Nov., 2003, Milan, Italy and welcomes the opportunity to submit its views on the themes of, inter alia, sustainable development, opportunities & solutions, vulnerability & risk, and other relevant information that need to be considered under Scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change as been invited by the SBSTA at its nineteenth session (FCCC/SBSTA/2003/L.26).

Saudi Arabia believes that a practical work program should incorporate a general scope and approach to work for this new agenda item and must be within the context of Article 4 of the Convention, where commitments for Annex I and non-Annex I have been clearly outlined and identified. To be concise, all issues to be considered here must emanate from a certain Article within the Convention that mandates it. Scientific and technical information in the Third Assessment Report within the context of Article 4 of the Convention has to be considered too when dealing with the issue of adaptation. To do so, the ground must be provided to share experiences and to take up opportunities on adaptation to integrate it within the sustainable development plan.

This agenda item should **promote exchange of information and experiences on:**

- a) Understanding of the scientific, technical and socio-economic impact of climate change and the impact of response measures,
- b) Identifying innovative efficient and state of the art adaptation technologies for both the impacts for climate change and the impact of response measure,
- c) Advising in the ways and means of promoting development and/or transferring adaptation technologies in (b).

The Modalities of work within this agenda item should also be flexible and should evolve as work develops and within SBSTA mandate as outlined in Article 9 of the Convention.

Saudi Arabia is highly concerned about economic adaptation to the impacts of response measures. A clear process is needed to advance solutions and opportunities to contribute to sustainable development through economic adaptation to the impact of response measures. Hence, any program of work needs to incorporate economic diversification as a mean to adapt economies of vulnerable countries to respond to the impact of response measures. It is also recommended that this work program focus on capacity building and transfer of adaptive and advanced technologies and also address the following:

- 1) Assess cost effective options including capacity building and transfer of technology for adaptation to contribute to sustainable development in the area of adaptation to climate change and adaptation to the impact of response measures,
- 2) Emphasize the integration of economic diversification in the sustainable development efforts
- 3) Promote an exchange of views on experiences in economic diversification and lessons learned

**Saudi submission on  
“Scientific, technical and socio-economic aspects of mitigation”**

Saudi Arabia would like to thank the UNFCCC Secretariat for the preparation of the pre-sessional Consultations on the TAR of the IPCC on 27-28 Nov., 2003, Milan, Italy and welcomes the opportunity to submit its views on the relevant information that need to be considered under Scientific, technical and socio-economic aspects of mitigation as been invited by the SBSTA at its nineteenth session (FCCC/SBSTA/2003/L.26).

Saudi Arabia believes that any exchange of information regarding this new agenda item shall be done within the context of Article 4 of the Convention, where commitments for Annex I and non-Annex I have been clearly outlined and identified. Differentiation between Annex I and non-Annex I is an important element for any scientific or technical assessment under mitigation. Non-Annex I commitment under mitigation must be confined to Article 4, Paragraphs 1 and 7 of the Convention and should be in accordance to their specific national and regional development priorities, objectives and circumstances, without introducing any new commitments, taking into account the provisions of Article 4, Paragraphs 4, 5, 7, 8 and 9 of the Convention. Any development on mitigation shall be aimed at ANNEX-I meeting their commitment under the Convention in particular Article 4 paragraphs 2 and 7. Discussions under this agenda item must be limited to the mandate of SBSTA as described in Article 9 of the Convention.

Saudi Arabia believe that an essential part of this agenda item is to advance robust solutions and opportunities to minimize the negative impacts of Annex I Parties response measures on non-Annex I Parties including negative spillover effects from potential mitigation measures taken by Annex I parties. This agenda item needs to further elaborate on the work of the IPCC-TAR and WGIII on spillover effects and impacts of response measures. This agenda item shall advance options to reduce impact of response measures and spillover effects

PAPER NO. 8: UNITED STATES OF AMERICA

**Submission of the United States  
FCCC/SBSTA/2003/L.26  
Views on Scientific, Technical and Socio-economic Aspects of Impacts of, and Vulnerability and  
Adaptation to Climate Change  
March 15, 2004**

The Nineteenth Session of the Subsidiary Body for Scientific and Technical Advice in December 2003 (SBSTA-19) requested the Chair “to take into account the views and information provided by Parties when organizing the workshops.” The United States welcomes the opportunity to provide views on the scientific, technical and socioeconomic aspects of impacts of, and vulnerability and adaptation to, climate change, highlighted by SBSTA-19, as reflected in FCCC/SBSTA/2003/L.26, and to provide suggestions on the organization and substance of an initial workshop at SBSTA-20, and a subsequent work program, on this new agenda item.

The United States recalls that, in undertaking work on mitigation and adaptation, FCCC/SBSTA/2003/L.26/Add.1 provides for the Parties to “focus on exchanging information and sharing experiences and views among Parties on practical opportunities and solutions to facilitate the implementation of the Convention.” Given this, we believe that a workshop or roundtable format focusing on different aspects of national and regional experiences in adaptation would be of particular benefit for parties. We note that discussions in the work program for Policies and Measures generated an appreciation for the importance of national circumstances, and believe that the sharing of national circumstances as they relate to climate change adaptation can also be useful.

We considered the pre-session workshop preceding SBSTA-19 to be particularly useful, in great part because it provided an interaction between representatives of SBSTA and those who are directly involved in practical adaptation efforts. We believe this approach would be a useful starting point for the SBSTA-20 workshop and subsequent work program, in order to share experiences and views among Parties on practical opportunities and solutions.

Countries are at various stages in a process of consideration of adaptation, and the experiences gained by different countries may be relevant and beneficial to all Parties to the Convention. Discussions at this workshop and under this agenda item generally should, therefore, include consideration of activities in countries with different circumstances. A SBSTA work program could enhance understanding of the range of considerations that goes into the development and implementation of adaptation strategies in various regions.

For both budgetary and participation reasons, the workshop on adaptation should be held during, not preceding, the regular SBSTA session. The adaptation and mitigation workshops should be held back-to-back, and the workshops should be given at least four days in total.

We believe the work program could usefully consider a range of technical and analytical issues, providing an opportunity to identify topics that we could usefully explore in a constructive and practical manner.

**Issue-Areas Related to Impacts, Adaptation and Vulnerability**

On adaptation, we would like to put forward five areas to be considered as a potential focus for early work under this agenda item:

- 1) Adaptation and Sustainable Development: This work could consider the ways in which adaptation factors into overall sustainable development strategies and planning. The work could address the following questions:
  - a. What conditions stimulate or constrain adaptation and what is the role of non-climatic factors in enhancing adaptive capacity and in adaptation choices/decision-making?
  - b. What is the process of adaptation decision-making at various decision-making levels in countries?
  - c. How much has formal planning occurred in response to climate-sensitive threats/vulnerabilities, and what is the appropriate role of such planning?
  - d. What experiences do countries have in incorporating climate impacts into adaptation and sustainable development strategies at the national and sub-national levels?
  - e. How is planning for climate change similar to or distinct from planning for other considerations (e.g., demographics, economic development patterns)?
  - f. How can adaptation considerations advance sustainable development, and vice versa?
  
- 2) Vulnerability and risk: We believe this issue-area, mentioned as a theme in para 4 of FCCC/SBSTA/2003/L.26, is more relevant to discussions on adaptation than those under the mitigation agenda item. The work could facilitate information sharing on efforts and plans to develop climate risk management and new assessment tools, and could address the following questions:
  - a. What methodologies and tools are appropriate to assess vulnerability to climate impacts and risks?
  - b. What are the strengths and weaknesses of existing vulnerability-relevant data and their usefulness in risk planning?
  - c. Are different methodologies appropriate for assessing risks at different temporal or spatial scales?
  - d. What is the appropriate level of vulnerability/risk assessment required to inform immediate and appropriate action on adaptation (e.g., rapid assessments, national action plans)?
  - e. How do the risks of and vulnerabilities to the impacts of climate change compare (in magnitude and severity) with similar risks and vulnerabilities due to other factors?
  
- 3) Assessing vulnerabilities and adaptation: This work could consider the follow issues, inviting presentations from practitioners on key sectors (water, agriculture and food security, coastal zone management, and health):
  - a. How are current vulnerabilities assessed?
  - b. What methodologies can be used for assessing climate-related vulnerabilities in the future?
  - c. What considerations might be taken into account when prioritizing among vulnerabilities and adaptation needs at various levels (local, regional, national)?
  - d. What data and information are needed to support the assessment of vulnerabilities and adaptation needs?
  
- 4) Good practice in the design of adaptation strategies: Work in this issue-area could consider the utility of developing good practice guidance for the design of adaptation strategies, and what factors might be considered. The work could address the following questions:
  - a. What criteria, if any, can be formulated to identify “good practice?”
  - b. Do experiences with planning for other forms of social and environmental change suggest appropriate approaches/good practice/priorities?
  - c. What techniques and technologies are most useful?
  - d. What are the strengths and weaknesses of existing adaptation-relevant data and their utility in national planning?
  - e. How can adaptation strategies be integrated with sustainable development and broader strategies for advancing human well-being, and vice versa? How can climate change related actions reduce existing vulnerabilities, and actions to reduce existing vulnerabilities aid

adaptation to climate change? How to take advantage of opportunities that may arise from the potential benefits of climate change?

- 5) Addressing institutional and human adaptive capacity: This work could also consider opportunities for, and constraints of, adaptive capacity to design and implement adaptation strategies at various levels. The work could examine local, regional, and national institutional and human capacity issues.

**Submission of the United States  
FCCC/SBSTA/2003/ L.26  
Views on the Scientific, Technical and Socio-economic Aspects of Mitigation  
March 15, 2004**

The Nineteenth Session of the Subsidiary Body for Scientific and Technical Advice in December 2003 (SBSTA-19) requested the Chair “to take into account the views and information provided by Parties when organizing the workshops.” The United States welcomes the opportunity to provide views on the scientific, technical and socioeconomic aspects of mitigation, highlighted by SBSTA-19, as reflected in FCCC/SBSTA/2003/L.26, and to provide suggestions on the organization and substance of the initial workshop at SBSTA-20, and a subsequent work program, on this new agenda item.

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We considered the pre-sessional workshop preceding SBSTA-19 to be particularly useful, in great part because it provided an interaction between representatives of SBSTA and those who are directly involved in practical mitigation efforts. We believe this approach would be a useful starting point for the SBSTA-20 workshop and subsequent work program, in order to share experiences and views among Parties on practical opportunities and solutions.

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For both budgetary and participation reasons, the workshop on mitigation should be held during, not preceding, the regular SBSTA session. The adaptation and mitigation workshops should be held back-to-back, and the workshops should be given at least four days in total.

We believe the work program could usefully consider a broad range of technical and analytical issues, providing an opportunity to identify topics that we could usefully explore in a constructive and practical manner.

**Issue-Areas related to Mitigation**

On mitigation, we would like to put forward three areas to be considered as a potential focus for early work under this agenda item:

- 1) Promoting research, development and diffusion of technologies to address climate change: The UNFCCC has focused primarily on regulatory and fiscal measures for addressing climate change. However, in order to meet the ultimate objective of the Convention without undermining economic and human well being, broader adoption of existing technologies will have to be complemented with



breakthrough technologies that will need to be developed and disseminated to address climate change.

It would be particularly useful for participants to exchange information on factors that spur advanced technologies, including effective national research, development and deployment measures, and the role of education and trade in ideas and services. The work could examine technical aspects of technology innovation and development, barriers to the development and dissemination of key technologies, social and economic aspects of technology development, and opportunities to increase the rate of diffusion of these technologies.

- 2) Climate change and sustainable development: The connections between climate change and sustainable development would be a useful theme for further exploration. Understanding and addressing these connections are common priorities of many countries, and this work would provide a particularly useful opportunity to explore actions that address both development and climate objectives, including for example, no-regrets actions. The work could also consider measures that both decrease vulnerability and mitigate climate change.
- 3) Mitigative Capacity: It would be useful to explore in greater detail the capacity of countries to design and implement mitigation strategies. This work could discuss tools to assess capacities and barriers in implementing mitigation strategies. This work could address an assessment of countries' institutional capacities that might look at the factors that can enhance or detract from those capacities, as well as incentives and barriers to effective action.

In the consideration of this workshop and any potential future work, the United States reiterates the importance of the conclusion in paragraph 10(c) of FCCC/SBSTA/2003/10 regarding avoiding duplicative work.

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