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SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE
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Item 3 (a) and (b) of the provisional agenda

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

Elements, scope and priorities of the work

Submissions from Parties

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA), at its eighteenth session, decided to complete its work under the Third Assessment Report (TAR) agenda item at its nineteenth session, and to initiate the following two new agenda items at its twentieth session, for regular consideration by the SBSTA:

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

(ii) Scientific, technical and socio-economic aspects of mitigation.

2. The SBSTA invited Parties to submit to the secretariat, by 30 October 2003, their views on the elements, scope and priorities of the work to be undertaken under these two new agenda items, including possible timing. The SBSTA requested the secretariat to compile the submissions in order to facilitate discussion on these items at its nineteenth session.

3. The secretariat has received 11 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.

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* 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: ARGENTINA

Comments on SBSTA´s invitation to provide views, scope and priorities of the work relative to the Agenda Item 3: IPCC TAR and the programmed further work for the SBSTA 20th session, including the following new items:

A. Scientific, technical and socio-economic aspects of impacts of, and vulnerability and and adaptation to climate change;
B. B: Scientific, techinical and socio-economic aspects to mitigation.

Comments:
The document FCCC/SBSTA/2003/10 dealing with the 18th SBSTA´s Session (Bonn, 4-13 June 2003), under Agenda Item 3: The Third Assessment Report of the IPCC, under Conclusions c) schedules the treatment of the above mentioned issues during its forecoming 20th Session. Therefore, the considerations of questions A and B above cannot be made only on the basis of the IPCC- TAR conclusions.

To focus the mitigation and adaptation issues better, SBSTA, and consequently the Parties, shall take into consideration that:

First: TAR has already sketched the lines for the combined analysis of adaptation and mitigation;

Second: the Outline for the IPCC Fourth Assessment Report envisages the consideration of a set of cross-cutting themes or issues which will enrich the treatment of both adaptation and mitigation;

Third: the current GHG concentration levels in the atmosphere and their consecuences in the vulnerability´s thresholds for natural and human systems, in particular the effects of the impacts of extreme events, made very clear that a strong effort to adapt to the current climate, in many ways exacerbated, conditions, calls for joint studies;

Fourth: the adverse consecuences of the Earth´s warming being suffered more by developing countries call for an upgrade of multilateral and other financing sources for enabling the adoption and implementation of adaptation strategies, for the sake of the WEHAB objectives, as expressed by the WSSD (Johannesburg, 2002).

In this regard, Argentina is in full agreement with the idea presented under Agenda Item 3.e), in the sense that the UNFCCC Secretariat should organize a pre-sesional consultation before the 19th Session of SBSTA, with the participation of the IPCC and representatives of industry, local Governments and non-governmental organizations, to provide information on issues A and B.

In connection with them, i.e.e mitigation and adaptation, the Parties shall take due account of the fact that:

The most sensible response to a wide range of possible threats is a combination of interventions, including damage avoidance, or mitigation and adaptation, and
In a globalized world adaptation does not only have local and regional biut also worldwide effects, with definite global environmental and socio-economic implicactions.

PAPER NO. 2: AUSTRALIA

The Third Assessment Report (TAR) of the IPCC: Views on the elements, scope and priorities of the work to be undertaken under the two new agenda items, including possible timing:

(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

The Eighteenth Session of the Subsidiary Body for Scientific and Technological Advice in June 2003 invited Parties to submit their views on the proposed two new agenda items. Australia welcomes the opportunity to provide views on the elements, scope and priorities of the work to be undertaken under the proposed new mitigation and adaptation agenda items.

Introduction
The proposed new agenda items should be guided by the new phase in the UNFCCC of agenda setting and implementation. The SBSTA plays an important role as the link between the scientific information provided by expert sources such as the IPCC, and the policy-oriented needs of the COP.

In keeping with SBSTA's mandate to facilitate the exchange of information, and to further the development, refinement, improvement and use of comparable methodologies, Australia believes that, in the short term, issues under the proposed new agenda items could primarily facilitate opportunities for reporting, information sharing and, where relevant, tasking the Secretariat to prepare appropriate papers, on mitigation and adaptation, and the inter-linkages between them. This exchange of information may also assist in targeting capacity building efforts on both mitigation and adaptation.

Australia believes 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. For example, relevant organisations (such as the IPCC, UNDP), NGOs, and business and industry.

At recognised at SBSTA18, the TAR concluded the ultimate objective of the Convention will not be achieved without action by countries in all regions. In this respect, regional forums, such as the Asia-Pacific Seminar, have an important role in promoting cooperation among Parties in assessing and managing impacts, and considering mitigation and adaptation options. This role includes facilitating an exchange of experiences/lessons learnt and identifying priority areas of capacity building in the context of meeting the objective of Article 2 of the UNFCCC.

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

Australia proposes that under the new agenda item (a) SBSTA explore opportunities for discussion/information exchange on the following:

1. Socio-economic scenario building tools at national and regional levels (and the combining of these tools with advanced scientific observation).
2. Capacity to design and implement adaptation strategies including the provision of feedback on the use of the Secretariat resource compendium;
3. An assessment of efforts by Parties in developing national adaptation policy frameworks;
4. Ways in which work already undertaken under NCSP may be reported under this agenda item including the UNDP Adaptation Policy Framework (APF);
5. Uncertainty/risk assessment strategies and management practices e.g., use existing information on natural climate variability to fashion risk management tools as a precautionary measure against increased risks;

6. How to successfully prioritise adaptation needs within and among countries, particularly developing countries;
7. The examination of next steps for the implementation of National Action Plans on Adaptation (NAPAs);
8. The attendance by implementing agencies and other development agencies at inter-sessional workshops, and as observers at SBSTA discussions in order to advance understanding and practice.
9. Identify what data and information are needed to support work under the proposed adaptation agenda item.

This list is an attempt to identify some initial practical ideas and is not intended to be exhaustive. The following paragraphs elaborate further items 1-4.

Socio-Economic Tools (1 above)

Australia believes that emphasis should be laid upon the development of socio-economic scenario-building tools at national and regional levels and how local and regional economic development plans respond to such tools, particularly in non-Annex I countries. Furthermore, experience in combining these tools with advanced scientific observation is an area that requires further examination. Australia believes that experience gained by the implementing agencies and other development agencies is invaluable, and that their attendance at inter-sessional workshops would provide practical opportunities to advance understanding and practice in this field.

Capacity to Design and Implement Adaptation Strategies (2 above)

Because of the complexity of making decisions about adaptation, there is a need to develop tools for decision-making that can be employed in the formulation, assessment, and adoption of specific adaptation measures, projects and programs. In 1999 the Secretariat produced a resource compendium describing the wide range of decisions tools actively in use across and within different natural resource and socioeconomic sectors. Australia would be interested to seek feedback from Parties that have made use of this tool to assess its usefulness and seek ways to possibly improve or update this resource.

Development of National Adaptation Policy Frameworks (3 above)

Australia proposes that an assessment of efforts to date by Parties in developing national adaptation policy frameworks be presented to SBSTA. Australia believes that such submissions may highlight difficulties and provide insight into the development of best practice, complementing work undertaken by the implementing agencies. Australia proposes an inter-sessional workshop to explore issues pertaining to national adaptation policy frameworks and to present the work and experience of Parties and implementing agencies.

Parties may also wish to consider ways in which work already undertaken under National Communication Studies Program (NCSP) might also be useful under this agenda item. Under Non-Annex I National Communications there is a series of planned international activities on adaptation that could be better integrated, reported and discussed within SBSTA.

UNDP Adaptation Policy Framework (4 above)

The use that Parties have made of tools such as the UNDP Adaptation Policy Framework (APF) should be considered within SBSTA. Improvements in the design and use of the APF will assist in the clarification of potential impacts and adaptation needs, as well as improvement in the analytical methods and tools used to respond to climate change. Australia would like to draw to the attention of Parties the Technical Papers accompanying the UNDP/GEF APF that provide technical guidance on specific methodologies and tools for different steps within adaptation strategy formulation. SBSTA may wish to consider ways in which the APF and accompanying technical papers may be utilised within SBSTA discussions on adaptation and at inter-sessional workshops.

Scientific, technical and socio-economic aspects of mitigation

Australia proposes that under the new mitigation agenda item (b) SBSTA explore opportunities for discussion/information exchange on the following:

1. The development of a mitigation policy framework evaluating the effectiveness and costs of national mitigation strategies;
2. Tools to assess capacities and barriers in implementing mitigation strategies;
3. Further study on the ancillary benefits of mitigation policies and measures – win/win approaches;
4. Sustainable development measures that influence vulnerability and emissions through the integration of climate change into national development plans;
5. Improve understanding of both short-term and long-term mitigation options that maximise achievement of sustainable development and invite Parties to identify win-win policies according to their national circumstances;
6. An analysis of institutional issues that directly relate to mitigation capacity in different countries (drawing on existing work already undertaken by international organisations);
7. Identify what information is needed to support work under the proposed new mitigation agenda item.

Again, the above list is not intended to be exhaustive and is an attempt to identify some initial practical ideas. The following paragraphs elaborate further items 1 and 2.

Development of Mitigation Policy Frameworks (1 above)

Australia believes that there is scope for further consideration of Parties' experiences in developing national policy frameworks, particularly in relation to incorporating these into sustainable development priorities. Appropriate systems to assist in the development of mitigation measures will help provide a sounder basis upon which policy decisions might be made in the near term. Given the complexity of making decisions surrounding mitigation, the sharing of experiences, policies and measures by specific sectors, for example, may be particularly useful.

Tools to assess capacities and barriers in implementing mitigation strategies (2 above)

Reporting through national communications should continue to be developed as an important role in communicating mitigation policies and measures by Parties, while the SBSTA could also look at other sources of comprehensive, policy-relevant information that is global in its coverage. Australia believes that efforts undertaken by Parties, development agencies and private companies to design and implement mitigation strategies could be better integrated in SBSTA discussions either within intersessional workshops or side-events. Tools to assess capacities and barriers in implementing mitigation strategies could further maximise achievement of effective mitigation options.

Links between two proposed new agenda items (a) and (b)

Australia believes that an integrated assessment that addresses both adaptation and mitigation is important for the assessment of costs and benefits of climate policy. The TAR highlights the inter-relationship between adaptation and mitigation policies and measures and the techniques used to plan and assess the implementation of such measures (refer Figure SPM-1 from the TAR Synthesis).

The TAR further observes that the integration of adaptation and mitigation policy options are likely to be more environmentally effective and economically efficient than policies that focus on one ahead of the other, or address each in isolation. Fragmented policies are more likely to require a trade off between adaptation and mitigation policies resulting in a less than optimal allocation of resources. The TAR identified the need to incorporate climate change considerations into the broader decision-making framework for sustainable development.

SBSTA could begin to explore policy frameworks that take these synergies into account. Australia suggests further exploring the development of tools and methodologies for identifying the most effective and efficient mix of adaptation and mitigation policies, appropriate to specific national, regional, local and/or sector circumstances. This may facilitate improved coordination and effectiveness of adaptation and mitigation policy frameworks, and the identification of no-regrets or cost-effective climate change policies.

The attached Annex is a ready reference of Australia's proposals on how work on adaptation and mitigation could be advanced.

Annex to Australia's Submission on SBSTA 3(a) and (b)
Proposed elements for a possible work programme

Scope/ purpose of the work		How the work could be done	Who should be involved (other than Parties)
Adaptation	Development of socio-economic scenario building tools at national and regional levels for adaptation	• Workshops • Side events • Promote research and technical work	• Relevant Agencies
	Sharing experiences in developing national adaptation policy frameworks	• Workshops • Exchange and dissemination of information/desktop review	• Secretariat • UNDP • Other international bodies
	Consideration of ways to improve variability and extreme weather event risk assessments	• Workshops • Side-events • Promote dialogue between scientists and policy makers	• Secretariat
	Consideration of ways to improve vulnerability and adaptation assessments	• Workshops to share national experiences • Update resource compendium	• Partner with relevant international bodies
	Consideration of policy options and national/sectoral planning processes on adaptation	• Workshops • Country case studies	• Relevant agencies
Mitigation	Development of mitigation policy frameworks for evaluating the costs/effectiveness of national mitigation strategies	• Workshops	• development agencies • relevant NGOs
	Further studies on the ancillary benefits of mitigation policies and measures	• Desktop Review	• implementing agencies • relevant NGOs • IPCC
Links between Adaptation and Mitigation	Development of tools and methodologies for identifying the most effective and efficient mix of adaptation/mitigation policies	• Facilitate exchange of information • Workshops • Side events	• development agencies • relevant international bodies • NGOs

	Improve understanding of both short-term and long-term mitigation options that maximise achievement of sustainable development pathways and identify win/win policies according to national circumstances	• Case Studies • Side Events • Workshops	• relevant international bodies • NGOs
	Develop an analysis of institutional issues that directly relate to mitigation and adaptive capacity in different countries.	• Case Studies • Workshops	• development agencies • Secretariat
	Identify what data information is needed to support the work program under the proposed new agenda items	• Submissions from Parties	• relevant international bodies

* Workshops may involve already existing/scheduled events outside the UNFCCC context. For example, scheduled events by NGOs and development agencies could also be considered.

PAPER NO. 3: AZERBAIJAN

We think that it will be better to include these two new points into the session agenda. It will enable to extend scientific researches in countries on climate change.

The priority fields for Azerbaijan Republic are energy, forestry, reproduction of fishes and human health.

PAPER NO. 4: CANADA

THE THIRD ASSESSMENT REPORT OF THE IPCC: VIEWS ON THE ELEMENTS, SCOPE, PRIORITIES AND POSSIBLE TIMING OF THE WORK TO BE UNDERTAKEN UNDER THE NEW ADAPTATION AND NEW MITIGATION AGENDA ITEM (FCCC/SBSTA/2003/L.15, PARAGRAPH 4).

We welcome the opportunity to submit our views on the elements, scope, priorities and timing of the work to be taken under the new adaptation and new mitigation agenda item, and would also like to refer to Canada's previous submissions related to the subject in FCCC/SBSTA/2002/MISC.5 and MISC.15, and FCCC/SBSTA/2003/MISC.2 and MISC.3.

The new work programmes present the opportunity for future discussions on both adaptation and mitigation issues relevant to all Parties and have the potential to ensure that the necessary information and tools will be available to assist all Parties to further address climate change and to inform future decisions.

Canada supports a balanced and staged approach to the initial elaboration of the work programmes, beginning with the sharing of information to help Parties begin to explore the issues and activities taking place, and drawing upon the knowledge and expertise of relevant international organizations and financial institutions as appropriate. As a first step, Canada looks forward to the active participation of all Parties in the CoP 9 pre-sessionals on the TAR.

Canada believes that the new work programmes may take some time to fully develop and that some topics may be taken up sooner than others. There will also be different starting points in terms of the body of available information, knowledge and expertise on adaptation and mitigation, and national circumstances must also be fully considered.

An important topic of discussion will be information and methodologies needed to better assess current and future vulnerabilities, and adaptive and mitigative capacities. Another important topic for both work programs will be the important role that both adaptation and mitigation play with respect to the objective of the Convention, and to sustainable development. To avoid repetition and to better streamline the SBSTA's work, these inter-linkages need to be periodically taken up in joint discussions.

As Parties step up implementation of the Convention and Kyoto Protocol, particularly as elaborated in the Marrakech Accords, they will be breaking ground in many areas and will uncover new problems and new solutions. This creates a relatively new dynamic for the UNFCCC, as it will be increasingly important for feedback and good communication between the SBI and the SBSTA. For instance, Parties' experience with implementation needs to be communicated to the SBSTA by the SBI so that the SBSTA can strive to provide improved information and tools to address challenges faced with practical application of agreed frameworks.

In this way, the new work on adaptation and mitigation should not duplicate, but make effective use of and add value to, work and discussions taking place under other SBI and SBSTA agenda items, in addition to looking to the future. The deliberations should continue to be grounded in sound science and take into account relevant information in the IPCC TAR.

Given the importance to our future decision making of exploring the new information, we recommend that initial work under these agenda items begin immediately.

Specific Suggestions for Elements of Work under the two new agenda items.

Scientific, technical and socio-economic aspects of impacts, vulnerability and adaptation.	**Scientific, technical and socio-economic aspects of mitigation.**
Exchange of information on reducing vulnerability and adapting to climate change: -experience with impact, vulnerability and adaptive capacity assessment, -developing policy frameworks for implementation of adaptation options, -national circumstances and factors affecting vulnerability and adaptive capacity.	Exchange of information on reducing greenhouse gas emissions: -experience with GHG emissions and mitigative capacity assessment, -developing policy frameworks for implementation of mitigation options, -national circumstances and factors affecting mitigative capacity.
Information needs for improved impacts, vulnerability and adaptive capacity assessment and analysis of options.	Information needs for improved mitigative capacity assessment and analysis of options.
Methods and tools for impacts, vulnerability and adaptive capacity assessment.	Ways to improve GHG inventories and assessment of emissions trends.
Integrating adaptation and sustainable development strategies.	Integrating mitigation and sustainable development strategies.
Promoting national actions on adaptation and cooperating with the UN and other relevant international organizations and financial institutions to further adaptation.	Promoting national actions on mitigation and cooperating with the UN and other relevant international organizations and financial institutions to further mitigation.
The role of adaptation in a portfolio of approaches to manage climate change risk.	Role of mitigation in a portfolio of approaches to manage climate change risk.
The role that impacts, vulnerability and adaptive capacity assessment can play to inform mitigation.	The role that assessment of mitigation potentials and pathways can play to inform impacts, vulnerability and adaptation needs.
Best practices to incorporate uncertainties and information gaps into climate change policy making and how the IPCC might frame uncertainties and levels of confidence to best serve policy makers.	Best practices to incorporate uncertainties and information gaps into climate change policy making and how the IPCC might frame uncertainties and levels of confidence to best serve policy makers.

PAPER NO. 5: CHINA

ELEMENTS, SCOPE AND PRIORITIES OF THE WORK UNDER AGENDA ITEM OF SCIENTIFIC, TECHNICAL AND SOCIO-ECONOMIC ASPECTS OF MITIGATION

In response to the conclusion of the 18th session of SBSTA (FCCC/SBSTA/2003/10), China puts forward the views on the elements, scope and priorities of the work to be undertaken under the new agenda items of *Scientific, Technical and Socio-Economic Aspects of Impacts of, and Vulnerability and Adaptation to, Climate Change* and S*cientific, Technical and Socio-Economic Aspects of Mitigation* as following:

Scientific, Technical and Socio-Economic Aspects of Impacts of, and Vulnerability and Adaptation to, Climate Change

1. Elements

（1） Impact

- Development of integrated assessment of climate change impact:

  Including the direct and indirect impacts of climate change on sectors, the role of technological improvement, international treaty and national policy on the reducing the adverse impacts of climate change, especially the impacts of extreme climate events.
- Assisting developing countries to develop methodologies and conduct the impact assessment research.
- Quantitative assessment of key regions and key sectors of climate change impact.

（2） Vulnerability

- SBSTA should invite the scientists to conduct research on indicators applied to the vulnerability assessment for different regions and different sectors.
- Assisting developing countries to develop methodologies and conduct the vulnerability assessment.

（3） Adaptation

- Evaluation of additional cost and capital requirement for the implementation of adaptation measures.
- Assessment of the barriers on financial resources, technology development and capacity building for developing countries.
- Evaluation of differences in adapting climate change between developing countries and developed countries.
- Technology inventory owned by developed countries and the technology inventory, which can be transferred to developing, and the technology inventory which developing countries required for the purpose of mitigating the adverse impacts of climate change.
- Formulation of international, regional and national policies and measures to deal with climate change adverse impacts, including policies and measures on technology development and technology transfer, financial resources and the capacity building.
- Possible global document to legally addressing adaptation to climate change.

2. Priorities

- Assessment of barriers on financial resources, technology development and capacity building for developing countries to deal with climate change impact.
- Formulation of international, regional and national policies and measures on technology development and transfer, financial resources and the capacity building to improve the adaptability to climate change

3. Timing

Being conscious of the importance and urgency in adaptation by developing countries to climate change, SBSTA should initiate activities proposed above as early as possible.

Elements, scope and priorities of the work under agenda item of scientific, technical and socio-economic aspects of mitigation

1. Elements

1) Mitigation and sustainable development
   - Clarifying Priority development goal of different countries;
   - Strategy of sustainable development
   - Ensuring energy security for implementing sustainable development in developing countries.

2) Evaluating the effects of leading activities of developed countries

3) The equity relating to mitigation
   - Right to keep basic needs
   - Right of development

4) Technical aspects of mitigation
   - Enhancement of R&D of new technologies;
   - Promotion of technology cooperation;
   - Facilitating technology transfer;
   - Encouraging technology application;

5) Assessment of social economic impacts of mitigation
   - Assessment of social, economic and environmental impacts of implementing Kyoto Protocol;
   - Enhancement of assessment of impacts of mitigation on the social aspect.

6) Capacity and responsibility of developed countries
   - Economic and technologic development level and capacity in mitigation;
   - Historical responsibility;
   - Responsibility of taking in lead – effects of lead, demonstration and assessment

7) Capacity and demands of developing countries
   - Strengthening the requirement analysis in different countries.
   - Promotion of capacity building.
   - Enhancement of exchange and cooperation in relevant research field.

2. Priorities

(1) Mechanism dealing with the relation between mitigation and sustainable development,
(2) Evaluation of leading activities of developed countries.

PAPER NO. 6: ITALY ON BEHALF OF THE EUROPEAN COMMUNITY AND ITS MEMBER STATES

THE SUBMISSION IS SUPPORTED BY THE FOLLOWING ACCEDING STATES: ESTONIA, LATVIA, SLOVENIA, SLOVAKIA

"Elements, scope and priorities of the work to be undertaken under the two new agenda items:

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,

including possible timing"

Italy, on behalf of the European Community and its Member States, welcomes the conclusion at SBSTA 18 to develop two new agenda items:

(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,

in order to better address the finding of the Third Assessment Report (TAR) regarding these two broad issues.

1. Context and over-arching aims for the new Agenda Items

The EU considers that the overall aim should be to develop practical work-programmes which will help all Parties to address their responses to climate change and to further develop, within the UNFCCC, a comprehensive framework to address climate change, leading to stabilisation of greenhouse gases in the atmosphere at a level which avoids dangerous anthropogenic interference with the climate system. The two work programmes initiated at SBSTA 20 should both be designed to address the scientific, technical and socio-economic aspects of Article 2 of the Convention and sustainable development.

The EU considers that we should not duplicate work already being undertaken under other agenda items.

In this context the EU proposes that the agenda item on **mitigation** should explore the relevant scientific, technical and socio-economic information on the long and short-term options for **mitigation**, including:

- technological and policy options, including consideration of research on emerging technologies,
- approaches to assist countries identify cost effective mitigation activities,
- assessment of ancillary benefits and damages avoided by mitigation actions,
- identification of the range of mitigation options which could deliver different greenhouse gas stabilisation pathways and levels,
- knowledge transfer of previous experience in applying mitigation practices.

The EU proposes that the agenda item on **impacts, vulnerability and adaptation** should explore the relevant scientific, technical and socio-economic information on approaches to **adaptation** and **impacts** and **vulnerability assessment**, including:

- technological and policy options, including consideration of research on emerging technologies,
- consideration of where the costs and non-monetary aspects of different impacts are borne,
- identification of the impacts of different stabilisation pathways, and the adaptation measures necessary to respond to the associated impacts,
- knowledge transfer of previous experience in applying adaptation practices.

2. Practical work programmes for these two new agenda items

The EU considers that the work programmes should contain several strands that address both the short and long term scientific, technical and socio-economic aspects of adaptation and mitigation. In particular these work programmes should include:

- Building on the assessments of the IPCC and the knowledge of the scientific community
- Working with practitioners
- Developing of practical guidance
- Ways and means to address, within the UNFCCC, issues related to the implementation of Article 2 of the Convention

Building on the assessments of the IPCC and the knowledge of the scientific community

The EU emphasises the continued value in drawing on the TAR, including its Synthesis Report, and the IPCC Special Reports and Technical Papers, under these agenda items and other agenda items of the Convention and its subsidiary bodies as agreed at SBSTA 16. The EU encourages the Secretariat to invite, when appropriate, experts from the IPCC and other international scientific bodies to explain in detail particular findings and results.

It is important to remember that a significant amount of information in the TAR and other Special Reports and Technical Papers has not been fully scrutinised by SBSTA. Discussions on the TAR agenda item at SBSTA 19 could use this as a good starting point when developing work programmes under the new agenda items.

Working with Practitioners

Scientific, technical and socio-economic information guides current activities in both adaptation and mitigation areas. The new agenda items should provide mechanisms by which information from practitioners can be made available to the Parties. Interaction with practitioners should be used to develop a better understanding of the practical difficulties and solutions to problems in mitigation and adaptation. This understanding should be based on the experience of those actually engaged in finding and delivering practical solutions. The work programmes should:

- encourage discussion on options for on-going and long term efforts,
- foster the development of international networks of practitioners to promote sharing of best practice and experiences,
- exchange information regularly with international organisations, particularly the UN Agencies, on their activities on adaptation and mitigation.

Developing practical guidance

The EU considers that it would be useful to develop some practical guidance for assessing and developing the scientific, technical and socio-economic basis of adaptation and mitigation options.

Adaptation is essentially a country and local level response, but it may be possible to identify generic options, or transferable approaches, which can build up to a more general approach. The interaction with practitioners would be particularly useful for spreading the knowledge on how to undertake adaptation projects.

The SBSTA may also want to review the availability of published guidance material on adaptation, for example guidelines produced by the IPCC and UN Agencies.

Similarly, it would be useful to identify generic issues and transferable approaches with respect to mitigation options, including costing assessments and techniques to develop portfolios of measures. Again the participation of practitioners could be invaluable.

The SBSTA may also want to review the availability of published guidance material on approaches to developing mitigation programmes.

Ways and means to address, within the UNFCCC, issues related to the implementation of Article 2 of the Convention

Longer-term responses on adaptation and mitigation need to be based on accurate scientific, technical and socio-economic information. In particular the EU proposes that the SBSTA develops elements of the work programmes under both agenda items that address the scientific, technical and socio-economic aspects that will ultimately be required to achieve the objectives of Article 2 of the Convention and sustainable development. This work will be technically challenging and may take several years. Therefore the EU considers that these elements of the work programmes should have a high priority and be started promptly. In addition, they are clearly linked and effort should be made to maximise coordination and co-operation between them.

In particular, under the agenda item on mitigation we need to explore a range of future scenarios which can lead to stabilisation at different levels of greenhouse gas concentrations, to identify critical decision making points and the range of options that might be open to achieving the objectives of Article 2. In this respect SBSTA needs to examine technological and policy options, and the direct costs and benefits of mitigation.

Under the agenda item on adaptation, it would be essential to identify key vulnerabilities, impacts, including non-linearities, the implications for adaptation at different levels of stabilisation, and the associated costs, including non-monetary aspects. This work would not at this point determine "dangerous levels" but it would put the Parties in a better position to assess where these might lie.

These elements of the work programmes could be undertaken in a variety of ways and should involve experts drawn from the scientific and technical community, including the IPCC and the networks of practitioners. Analyses could also be undertaken using the roster of experts.

3. Conclusions

The EU believes that these new agenda items provide the opportunity to develop Parties' thinking on the options for addressing the mitigation and adaptation challenges through shared analysis of the nature of the problem of climate change, review of potential options and current practices. The EU also highlights the importance of maximising coordination and co-operation between the work programmes under these new agenda items, particularly with respect to the elements, which address Article 2 of the Convention including sustainable development.

Finally the EU looks forward to working openly and constructively with other Parties on these issues.

PAPER NO. 7: JAPAN

Japan welcomes the opportunity to share the view on the SBSTA's new agenda items: 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.

The forthcoming negotiation on the climate change needs to be based on the updated scientific platforms. In this sense, these agenda items will be of extreme importance. On initiating discussion under these new agenda items, the first step should be taken by sharing information and exchanging views in order to build common understandings on feasible works under these agenda items and on their time frame, taking into consideration submissions from Parties and experts' opinions. Then thereafter, where necessary, it would be appropriate to proceed to the next step including establishment of work program.

1. Scientific, Technical and Socio-Economic Aspects of Impacts of, and Vulnerability and Adaptation to, Climate Change

(1) General comments

- As pointed out in the TAR, adaptation is a necessary strategy to complement climate change mitigation efforts, and it can reduce cost-effectively climate change risks.

Taking mitigation measures including emission reduction is the most fundamental measures to address climate change risks. On the other hand, the TAR indicated that recent regional climate change, particularly temperature increases have already affected many physical and biological systems, and projected change in climate extremes could have major consequences. Adaptation responses should be implemented in such a way to minimize the already observed/ possible future adverse effect of climate change at regional level. Under uncertainty associated with adverse effect of climate change at regional level, it is the urgent task to develop the method for selection from various policy options including both mitigation and adaptation, and find the best mixture of them.

- Adaptation is in nature to address adverse effect of climate change at local/ regional level, therefore, it should be implemented through considering the local/ regional characteristics including local ecosystems and social-scientific aspects such as responsive capacity to climate change.

- At the same time, it is necessary to integrate adaptation policies with sustainable development policies, paying attention to specific circumstances for each country. For this purpose, it is necessary to assess mutual impacts between these two policies.

- Given the fact that scientific knowledge on adaptation is less developed than that on mitigation, it is necessary to go forward adaptation policies on step-by-step basis, developing scientific knowledge on adaptation at the same time.

(2) Elements and Priorities

Japan believes that it is appropriate, for the time being, to start exchange of information in the following elements:

(i) Options for adaptation technologies

It is necessary to collect and classify information on the options for existing adaptation technologies. On selecting options, it should be noted that cost for adverse effects of climate change need to be assessed.

(ii) Integration of adaptation policies with sustainable development policies

Policy options for integrating adaptation with the sustainable development need to be sorted, taking into consideration the assessments of projected climate change and vulnerability at local/regional level.

2. Scientific, Technical and Socio-Economic Aspects of Mitigation

(1) General comments

- It is important to make utmost efforts to achieve effective emission reduction towards the ultimate objective of the Convention.

- Integration of policy for tackling global warming with policy for sustainable development is important. Therefore, assessment should be made on the mutual impacts between mitigation and sustainable development (improvement of energy efficiency, mitigation of air pollution, etc.)

- Technologies have an important role. Long-term development of technologies and dissemination of existing technologies should be strategically implemented.

(2) Elements and priorities

Japan believes that it is appropriate, for the time being, to start with exchanging of information on feasible works in the following elements in initiating the discussion under this item:

(i) Policy integration of mitigation with sustainable development

It is important to implement climate change policies in a sustainable way. For example, it seems better to collect and sort information on applications of existing mitigation technologies, such as mitigation measures contributing to improvement of energy efficiency or atmospheric pollution. Through such information exchange, we can build common understanding regarding the connection of climate change policies with sustainable development under the compatibility between economy and environment. For this purpose, it is useful to collect and sort information on policy options other than climate change, such as cost-effective options, Win-Win approach, development policies, measures to atmospheric pollution, and so on.

(ii) Existing and future emission reduction technologies

In addition to promoting the dissemination of existing technologies, information on technological options contributing to future long-term strategy of technology development need to be exchanged.

(iii) Emission projection on the national/ regional level, potential for emission reduction and its possible economic impacts.

It is useful to share following information contained in the TAR and national communications among Parties by compiling relevant information of these documents:

- Emission projection
- Estimates of the potential for emission reduction
- Economic impacts of the emission reduction

In particular, national communications are of more importance for SBSTA.

(iv) Reducing duplication of agenda items in the SBSTA

On creating the new agenda item at the SBSTA, it is necessary to examine agenda items in the SBSTA from the viewpoint of minimizing duplication of work with existing agenda items and facilitating the efficient discussion.

PAPER NO. 8: MALAYSIA

THIRD ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

In response to the invitation by the 18th session of SBSTA (FCCC/SBSTA/2003/10) for Parties to submit their views, Malaysia would like to put forward the following views on the elements, scope, and priorities of work to be undertaken 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.

The separation of the discussion into two separate agenda items would ensure equal opportunity for each of the topics to be discussed in detail, while allowing the consideration of cross-cutting issues.

The scope of the work shall remain within the bound of the title of each agenda item and the elements identified below are considered important. In particular, the narrowing of scientific uncertainties must remain a priority within the time-frame of the Fourth Assessment Report of the IPCC.

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

(i) Adaptive capacity and adaptation programmes linked with sustainable development

The IPCC defined adaptive capacity to be the potential or ability of a system to adapt to climate change stimuli or their effects or impacts. A country's region or socio-economic group's ability to adapt to climate change will vary depending on the state of development or underdevelopment and the resources constraining adaptive capacity. Enhancement of adaptive capacity will involve improved access to resources, reduction of poverty, narrowing of inequities in resources and wealth among communities, improved infrastructure, improved education and access to information, diminished intergenerational and structural inequities, respect for accumulated local knowledge, assurance that responses are comprehensive and integrative and not just technical, active participation by concerned parties in actions that match local needs and resources, and improved institutional capacity and efficiency. Thus, adaptive capacity to deal with climate risks is closely linked to sustainable development and equity. The IPCC noted that the poorest countries will be worst affected by climate change. Hence, priorities must be given to formulate and implement adaptation programmes that are linked to sustainable development through international collaboration. Another important area for consideration is to assess vulnerability and adaptive capacity of countries and regions, in particular, poorer developing countries, to the impacts of sudden climate change.

(ii) Transboundary impacts

Transboundary impacts of adaptation is an issue seldom discussed although its impacts can be irreversible. For example, land reclamation as part of an adaptation programme in one area can affect both the natural and socio-economic systems of another area. These issues must be analysed and impacts monitored in the implementation of any adaptation programme.

(iii) Development of indigeneous knowledge

The world contains a number of civilizations that have gone through the test of time in climate variability and have accumulated knowledge and wisdom through their cultural and socio-political knowledge in adapting to climate variability. There needs to be systematic synthesis and analysis as well as incorporation of such knowledge into existing scientific knowledge on adaptation. The integration of local knowledge and wisdom into adaptation programmes will likely make these more effective.

B. Scientific, technical and socio-economic aspects of mitigation

(i) 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 must therefore address the issue of energy security and reliability whilst ensuring fair and equal access to energy resources and availability to all Parties. No member Party should be handicapped by lack of energy security and access in their development process by any mitigation measures recommended and implemented under the Convention.

(ii) Assessing the socio-economic impacts of climate change mitigation

TAR has made a number of assumptions in the economic analysis relating to climate change mitigation options. Further understanding and analyses of these mitigation options, including the spill-over effects, are crucial. In particular, the agenda item must discuss socio-economic scenarios that would not broaden the per-capita gap between developed and developing country Parties and should narrow the North-South GDP gap through mitigation measures.

(iii) Equity issues relating to carbon emissions

Carbon emissions by the developing world would undoubtedly increase as part of their national efforts to lift their populations out of poverty while ensuring sustainable development. The right to a sustainable living standard and equitable access to energy must be taken into account and assessed in the development of any indicators of carbon emission. These indicators should also reflect changes in terms of population, GDP, fuel mix and energy efficiency in comparison to absolute carbon emissions.

(iv) Self-sufficiency of energy sector development

Effective transfer of appropriate energy technologies will enable the developing world to manufacture affordable energy technologies to harness unique domestic energy resources and later to export these 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 the technical aspects of mitigation.

C. Cross-Cutting issues

(i) Meaningful support for research and development

Research and development work 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, vulnerability as well as adaptation and mitigation response requirements. Priority should be given to the identification of scientific issues through greater discussions with the scientific communities with a view to enhance the understanding of the science related to climate and climate change, the response measures required as well as further reduction of uncertainties. Consideration of these issues shall also include practical, cost effective approaches to adaptation and mitigation, optimal requirement of information and tools to narrow uncertainties and the development of reliable impact and vulnerability assessments followed by the identification of adaptation and mitigation strategies. For research and development work 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, or access to, environmentally sound technologies and know-how as well as capacity building in such areas for developing country Parties.

(ii) Information exchange :- a clearing house mechanism

Accurate information on impacts, vulnerability, adaptation and mitigation are crucial in order that Parties can take 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. A clearing house mechanism under the UNFCCC umbrella is proposed as the other priority area as it would greatly facilitate and enhance information sharing benefiting all Parties.

(iii) Technology development, transfer and diffusion

After several years of entry into force of the Convention, the transfer of technology from developed country Parties to developing country Parties is still weak and there has been very little encouragement in the development and enhancement of endogenous adaptation technology although development and transfer of such technology is an agenda item of SBSTA. It remains appropriate for technology development, transfer and diffusion needs to be further assessed and discussed under each of these two new agenda items to give further impetus to this issue. In particular the agenda item shall address ways and means to combat climate change through technology improvement and accessibility.

(iv) Capacity building

Capacity building remains an important issue in the negotiation process under the Convention. The success of the Convention depends greatly on the strengthening of capacities in each country Party to implement and operationalise the commitments under the UNFCCC. Hence, focus should continue to be given on this issue, particularly, in relation to the two new agenda items.

(v) Food and water security and availability

Food and water security and availability remain the top priority agenda of the world at large. Hence, these issues must be addressed under the two agenda items to ensure that any options agreed upon will not threaten the food and water security, availability and access by any country Party.

PAPER NO. 9: MEXICO

ZACATECAS INTERNATIONAL POLICY DIALOGUE ON VULNERABILITY AND ADAPTATION TO CLIMATE CHANGE: TOWARDS A COMMON AGENDA FOR DEVELOPING COUNTRIES

CHAIRMAN'S REPORT

BACKGROUND

Following an initiative of the government of Mexico and with financial and technical support from United Nations Development Program (UNDP), a group of experts met in the city of Zacatecas, Mexico, 17-18 June 2003, to launch a process for developing the international agenda on vulnerability and adaptation to climate change for developing countries, and to draw the attention of political leaders and multilateral negotiating processes to this agenda.

The Zacatecas Dialogue was attended by experts from Argentina, Bolivia, Burkina Faso, South Korea, Costa Rica, Cuba, Egypt, Fiji, Guyana, Hungary, Kenya, Malta, Mexico, Trinidad and Tobago and Venezuela, coming from government agencies, international and regional institutions and programmes, academic institutions and international agencies including UNDP, United Nations Environmental Programme (UNEP), and the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat. The list of participants is attached as Annex I.

The Dialogue was chaired by Francisco Székely, Deputy Minister for Environmental Policy Planning of the Ministry of the Environment and Natural Resources of Mexico (SEMARNAT). The Agenda is attached as Annex II.

INTRODUCTION

Deputy Minister Székely welcomed the participants and underlined that the Zacatecas Dialogue was initiated at a moment when important environmental initiatives were being carried out in different areas of the world and, in particular, emphasized the fact that on June 17 the global community observed the International Day to Combat Drought and Desertification.

Dr. Székely recalled the increasing clarity of the effects of climate change being felt worldwide, and are having greatest impact on the most vulnerable countries and their population. He recalled that the Eighth Conference of the Parties to the UNFCCC, that took place in New Delhi, India, acknowledged that "climate change can put at risk future well-being, ecosystems, and economic development."

He underlined that the main purpose of the Zacatecas Dialogue was to attract the attention of the international debate on climate change to vulnerability and adaptation. While recognizing the importance of achieving the agreed targets and timetables to reduce greenhouse gas emissions, he also stressed that the problems faced by vulnerable countries could not wait for the Kyoto Protocol to enter into force and proves itself effective.

Alvaro Umaña, Principal Adviser and Leader for the UNDP Environmental Sustainable Development Group, highlighted the increasing frequency of extreme weather related hazards observed during the last decades. While the impacts of these events are distributed unevenly around the globe, the poor consistently suffer the most. He noted that preparing for and responding to these events is possible, as well as the joint promotion of investments in prevention, community ownership in policy-making and increased responsibility of local authorities in preparing for extreme weather events. Improved leadership, governance mechanisms, information management and public awareness will be key aspects for prevention.

The International Dialogue was then officially opened by the Governor of Zacatecas, Ricardo Monreal Avila, who drew attention to the linkages between the global environmental problems such as climate change, and the local impacts that these problems were already causing in the state of Zacatecas, particularly in the agriculture sector.

OPENING OF THE DIALOGUE

VULNERABILITY TO CLIMATE CHANGE

Under this agenda item, Deputy Minister Székely presented an overview of vulnerability to climate change, underlining the fact that extreme climate events such as intense cyclonic activity in the inter-tropical zone, floods and forest fires in different regions of the world are already affecting all regions of the world, particularly the poorest.

For the last ten years, climate change negotiations have centered on mitigation and have not given sufficient attention to vulnerability and adaptation to weather-related hazards. Therefore Mexico's proposal for the Zacatecas Dialogue had two main objectives:

1. To place vulnerability and adaptation to climate change as a priority for the international community, and

2. To direct the attention and commitment of policy makers to address vulnerability and adaptation to climate change as a priority matter.

Dr. Székely concluded by inviting all participants to take on an open and forthright dialogue and to uphold a joint analysis of our vulnerability to climate change and the viable alternatives to face it.

PANEL 1: THE PROBLEM

According to the Agenda, experts coming from different regions addressed the key issues in order to introduce the topics that would be discussed during the dialog.

Professor Lino Briguglio of the Islands and Small States Institute of the University of Malta presented the conclusions of the Third Assessment Report of the Intergovernmental Panel on Climate Change on the common aspects of vulnerability shared by small island developing countries. He highlighted in particular the ethical dimension of the adaptation issue whereby the bulk of emissions are from industrialized countries and that climate change impacts the poor the hardest. He described current work on developing a vulnerability matrix for measuring and comparing the environmental and economic vulnerability of countries to climate change impacts. He noted the common problems that vulnerable countries face in designing appropriate adaptation response measures.

Attila Hevesi, Associate Professor of the Department of Physical Geography and Environmental Sciences of the University of Miskolc, Hungary, summarized the research on atmosphere and climate system as the most important factors of the health of the planet and its ecosystems. He provided an historical overview of the relationship between climatic change and major changes in human society – some positive, some negative, but always profound. These historical references help to put into context the challenges faced by those seeking to plan for adaptation and response measures.

Doctor Manuel Anaya, of the Postgraduate College of the University of Chapingo, Mexico, presented an overview of the global problem of desertification and drought, particularly in Mexico with emphasis on social and economic impacts caused by this problem. For example, drought is responsible for the loss of 25% of the agricultural productive land in the world, 20% of it in Mexico. There is an urgent need to develop infrastructure for rainfall capture, storage and irrigation systems due to the irregular and unpredictable distribution of rainfall.

PANEL II: HOW WE ARE RESPONDING TO THE CHALLENGE.

Designated experts introduced on going initiatives describing efforts and examples to respond to adaptation to complex risk in a context of greater uncertainty and rapid climate changes.

Pascal Girot, UNDP Policy Adviser for Environmental Risk presented a review of existing international frameworks to address vulnerability and adaptation to climate change. He recalled that the central concern of this policy dialogue over climate change, environmental degradation and recurrent disasters is the capacity of natural, social and economic systems to prevent, mitigate and recover from climatic hazards. Adaptation to complex risks, in a context of increased uncertainty and rapid change, requires new concepts and tools. UNDP has been developing a Global Adaptation Policy Framework that seeks to define future climate risks and adaptation measures to reduce them. Through integrated climate risk management present and future climate hazards in vulnerable developing countries can be adequately incorporated into sustainable development planning.

Ulric Trotz, Head of the Regional Project Implementation Unit for the Adaptation to Climate Change in the Caribbean, presented the results of many years of work in developing an adaptation policy in the Caribbean region under the GEF-funded Caribbean Planning for Adaptation to Climate Change (CPACC) and the CIDA-funded Adaptation to Climate Change in the Caribbean (ACCC) projects. Beginning with an overview of the adaptation policy developed under the UNFCCC and its financial mechanism, the GEF, Dr. Trotz described the objectives and the component activities of these projects, which are designed to address vulnerability issues in the Caribbean region. These projects have facilitated the articulation of National Adaptation Policies and Implementation Plans in eleven participating countries.

GENERAL DISCUSSION

In the plenary session, participants commented on the presentation by the panels of experts and expressed their views on different aspects of vulnerability and adaptation. One of the main issues addressed was related to the insufficiency of financial resources, and the fact that while a number of funds have been created, the resources themselves have not been made available.

The need to maintain and strengthen information systems and databases was also pointed out as crucial to assess the extent and the dimension of the problems of vulnerability.

Alliances should be seen as the basis for constructing successful initiatives. The need to promote coordination and collaboration amongst the international organizations that have projects and activities on adaptation was emphasized. For example, the synergies between international environmental agreements, international organizations within the UN system should be promoted. A vulnerability index was considered to be important for developing preventive strategies.

WORKING TOGETHER

After the presentations, the Dialogue continued in three different working groups integrated with experts coming from different regions. The working groups received guidance form the coordinator of the Dialogue through specific questions.

The debate and proposals of the three working groups can be summarized as follows:

Working Group I

On addressing the main elements for constructing a vulnerability agenda for developing countries, participants in this group elaborated on:

- Starting points.
- Current initiatives and processes to build upon.
- Common denominators when faced with vulnerability to climate change.
- Preventive measures necessary to adapt to changing climate conditions.
- First and concrete actions, timeline and future steps in the process of creating and promoting this common agenda.

In an effort to identify the main elements for constructing a vulnerability agenda for developing countries, Working Group I addressed the commonalities, common denominators, actions and strategies that should be considered in building this agenda.

Taking into account the three elements of sustainable development and rising a common understanding of what it is meant by social, economic and environmental vulnerability to climate change including fragility and resilience of institutions, productive capacity and ecosystems, the group identified as economic commonalities shared by developing countries the structure of the economy, the lack of funds, difficulty on accessing state of the art technology and financial resources, and lack of economic infrastructure. Among identified social commonalities were poverty, insufficient education and lack of consciousness, rapid population growth, lack of health infrastructure to face the effects of climate change. Environmental commonalities singled out by the group were fragile ecosystems and increasing land degradation, deforestation and overgrazing resulting in degraded terrestrial and marine environments.

Common institutional deficiencies were also identified, for example, inexistent or inadequate political awareness on climate change impacts, which are addressed with a remedial and sector approach. The low priority given to environmental issues results in inadequate assessment and information, obsolete technology, inadequate legislation and weak policy frameworks, and insufficient or inadequate environmental and developing land planning.

Common denominators that developing countries should take into account when faced with vulnerability to climate change are rehabilitating degraded ecosystems, improving access to information and technology, generating better and more timely information for policy making and decision taking, promoting sustainable livelihoods, implementing poverty reduction programs, cross-sector and long term planning, land use planning, developing policy and legal frameworks related to climate change, and improving current legislation to include climate change considerations.

Although there is much to be done, the participants were able to identify examples of good practice to build upon. At the international level, the working group recognized the leading role that the Alliance of Small Island States (AOSIS) has played in highlighting the importance of vulnerability and adaptation in global fora.

At the regional level, in the Caribbean, a climate change center is being established to carry out regionally focused research on vulnerability and adaptation to climate change that will be complementary to the studies pursued under the recently funded Mainstreaming of Adaptation to Climate Change (MACC) Project.

At the national level, there are examples of efforts to shield long term environmental planning from short term political processes, for example 25+ year sustainable development planning as the Strategic Forestry Plan 2025 in Mexico; to mainstream predicted changes into planning and policy frameworks, for example ecosystems approach to land use; "greening" of Property Rights (PRs) and cross-sector planning like Institutional Water Resource Management (IWRM); to improve the quality of and access to information for transparent and accountable decision-making, for example freedom of information acts like the Federal Law of Transparency and Access to Governmental Public Information in Mexico; and to increase public awareness and education. Other important initiatives are referred in Annex III.

However, the working group underlined that the majority of existing regional and international initiatives are uncoordinated and dispersed, and there combined effectiveness has not yet been assessed.

The group identified the following concrete actions to consolidate a common agenda for vulnerable developing countries:

- Development of links and working relationships with AOSIS.
- Access to financial resources.
- Development and implementation of programs and projects to strengthen preventive and response capacities.
- Mechanisms to share information and successful experiences amongst vulnerable developing countries.
- Development of operational links with regional and sub-regional initiatives geared to face vulnerability.

The initial concrete actions, timeline and future steps in the process of constructing and promoting a common agenda are stated in the last section of this report.

Working Group II

On addressing how to adapt to climate change and how to minimize its adverse effects, participants in this group elaborated on:

- Quick review of existing knowledge and initiatives.
- Lessons learned from on-going practice.
- Dealing with surprises and uncertainty.
- Advantages and limitations of current sector approaches.
- Scaling up and out adaptation measures.

This group addressed the technical problems related to adaptation measures. After reviewing the range of existing knowledge derived from ongoing practices and initiatives in climate change adaptation in different regions of the world, the group recognized as a starting point for discussion the fact that adaptation is imperative because climate change is inevitable.

The group concluded that a first step in achieving adaptation is raising public awareness on what are present and future climate risks and how to live with them. Successful adaptation strategies require political commitment and well positioned and informed promoters. Comprehensive legislation is not enough, it needs to be enforced as well.

There is a need for better and more timely information on vulnerability to climate change. Developing countries need access to funding in order to develop databases for monitoring and infrastructure. There is also a lack of knowledge on how to carry out comprehensive vulnerability assessments. These tools are

prerequisites to generate realistic risk scenarios and to define adequate risk management approaches to guide future adaptation strategies.

Among adaptation measures identified by the group the following can be highlighted:

- Rain water capture systems have allowed to sustain water supplies, specially under drought conditions.
- The development of aquifer recharge systems through the construction of underground dams.
- The use of crop varieties adapted to changing climate and soil conditions.
- The conservation and restoration of key ecosystems such as mangroves for coastal protection.

Adaptation has to be mainstreamed into broader policy arenas, particularly those dealing with sustainable development. These often require updated legal and regulatory frameworks, the design and application of innovative economic instruments and other policy instruments, such as risk transfer instruments which include measures like insurance and product diversification.

Adaptation measures can have several benefits, among them coherence with other agendas, such as desertification, biodiversity and social development. In this respect, it is important to comprehend and communicate linkages such as those that exist between climate change and biodiversity, quality of life, as this might enhance acceptability in public opinion and at the political level.

In many cases, adaptation measures can result in mitigation, for example, the promotion of the use of renewable energy resources. This is important to emphasize in the international and intra-regional dialogue.

A key element to face adaptation challenges is to promote south-south cooperation. This will allow countries with common environmental, economic and social conditions to share best practices and to assist each other according to their successful experiences (Annex IV).

Working Group III

On addressing how to broaden the current international focus in order to respond to priorities of developing countries vulnerable to climate change, the participants of this group elaborated on:

- Advantages and limitations of the current policy instruments on climate change.
- New key partners and institutions for promoting a global agenda on vulnerability and adaptation.
- Risks and opportunities of balancing the agenda on climate change to include vulnerability and adaptation.
- Future options and where should this international dialogue be taken forward.
- Providing guidance to international agencies (UNFCCC, UNDP, GEF, UNEP, WB... etc) to support global, regional and national agendas on vulnerability.
- Access to means of implementation (financial resources and technology transfer).

During the past decade of multilateral negotiations on climate change under the UNFCCC, the emphasis has been centered on mitigation by reduction of green house emissions by industrial countries. Vulnerability and adaptation should not be dealt with as issues less relevant than mitigation or unrelated to it.

There was an in depth debate on whether the UNFCCC objectives were relevant to vulnerability and adaptation. It was recognized that Article 2 of the Convention[1] addresses both mitigation actions and adaptation options, as well as other relevant provisions. A balanced approach addressing both mitigation and adaptation issues is recommended to be achieved in the context of the next IPCC meeting that will focus on how to interpret Article 2, which is still under discussion after 12 years.

The United Nations Framework Convention on Climate Change (UNFCCC) was recognized as the main policy instrument on climate change.

The group underlined that there is a need to improve the coordination among UN Conventions and other international bodies in order to support sustainable development and to address and support the UNFCCC process in a holistic manner. Regional and sub-regional activities should be supported, since adaptation is crucial to most non Annex I Parties.

UNFCCC Subsidiary Bodies and other UN Conventions whose objectives indirectly deal with vulnerability and adaptation issues, should be the key partners for promoting a common agenda for developing countries, as well as regional and sub-regional political, social, financial, scientific and academic institutions. North/South and South/South cooperation has to be promoted and private sector investment in vulnerability and adaptation should be sought.

The Working Group recognized that an equilibrium must be reached between adaptation and mitigation measures, for there are risks as well as opportunities in balancing the agenda on climate change, highlighting the issue of vulnerability to include adaptation. Among the risks, a reference was made to the fact that Annex I Parties are failing to comply with their mitigation commitments, and shifting focus from mitigation to adaptation activities could propitiate cooperation conditionality that would link assistance to additional participation of non Annex I countries, resulting on even less attention to mitigation.

It is necessary to promote awareness on vulnerability and adaptation to climate change among negotiators, stakeholders and policy makers at national and regional levels.

Zacatecas Dialogue should be replicated and expanded to include other geographical areas. Through proper channels, its objectives should be included in the UNFCCC agenda and addressed at the highest level, such as Regional Ministerial fora and meetings of other relevant Regional Bodies.

Guidance to international agencies (UNDP, GEF, UNEP, WB, IPCC, etc) should include this initiative in their sustainable development agenda. The Government of Mexico should continue to present this initiative to other Governments. Participants are asked to make advocacy for this initiative in their countries and regions.

[1] ARTICLE 2. OBJECTIVE OF THE CONVENTION.
The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved 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.

1.

FOLLOW UP

Working Group I suggested the following set of concrete actions, timeline and future steps to take this initiative forward for the Zacatecas Dialogue participants' consideration:

1. Request that Mexico leads the follow up of the Zacatecas Dialogue and share the results with other vulnerable developing countries, in particular with AOSIS countries, and with relevant regional and international organizations, by July 2003.

2. Circulate results of the dialogue on WWW, by July 2003.

3. Following the mandate described in paragraph 1, request the Chair of SBI to distribute the Chairman's Report as a contribution for the undergoing activities on vulnerability and adaptation to climate change, and in preparation for COP 9, by September 2003.

4. Highlight vulnerability and adaptation and the Zacatecas Dialogue results at relevant sub-regional, regional and global fora, for example during an intervention and side event at COP 9, in collaboration with AOSIS, seeking support from UNDP and other sources; at WTO Cancun Ministerial Meeting; and the regional preparations for Barbados + 10.

5. Establish links between vulnerable communities north and south to promote advocacy on vulnerability and adaptation.

6. Approach possible civil society and private sector partners, including NGOs and reinsurance industry.

7. Explore the possibility for alternative and/or additional funding mechanisms for vulnerability and adaptation initiatives.

8. Future meetings of the Zacatecas Dialogue should be held in different countries on a rotation basis.

ANNEX III

Examples of current initiatives and processes:

- **Methodologies/Approaches:**
  Vulnerability indices, vulnerability assessments, NAPAs.

- **Funding or support mechanisms:**
  GEF, Special Climate Change Fund, Adaptation Fund (KP), LDC Fund.

- **Political groupings:**
  AOSIS.

- **Policy making processes:**
  GEF, UNFCCC/KP, IPCC, CDD, BPOA, NEPAD.

- **Projects/Initiatives:**
  MACC, PICCAP, Mexico/Cuba project Andean Project

ANNEX IV

Review of existing knowledge. Lessons from on-going practice.

- Adaptation is imperative because climate change is inevitable.
- Effects of Climate Change influence everybody and every region, but has greater impact on more vulnerable countries and population.
- Public awareness on adaptation: the public needs to know what are present and future climate risks and how to live with them.
- Successful adaptation and mitigation strategies require political commitment and well positioned and informed promoters. Comprehensive legislation is not enough; it needs to be enforced as well.
- The design phase of adaptation projects is important and should take into account historical data series and build future scenarios considering extreme events.
- There is a need for better and more timely information, but database construction is made difficult by the lack of funds for monitoring and infrastructure. There is also a common lack of knowledge about the carrying out of comprehensive vulnerability assessments.
- Adaptation measures should also build on traditional knowledge.

Hazard type	Examples of best practices in adaptation
Drought	• Rain water capture • Underground dams and aquifer recharge • Soil conservation measures – no tillage agriculture • Traditional terracing • Adapted crop varieties to climate and soil conditions • Product diversification and re-conversion • Innovative irrigation systems (drip irrigation) • Desalinization plants
Flooding	• Dikes and civil defense infrastructure • Flood plain management and zoning • Restoration of key ecosystems (wetlands, forest) • Traditional housing designs (stilts) • Improve urban drainage and building codes • Redesign and retrofit of existing infrastructure
Extreme temperatures	• Improved ventilation in housing • Investment in air-condition • Improved emergency health services
Coastal storm surges	• Mangrove restoration • Planned retreat and zoning regulation • Desalinization plants • Regulated tourism industry • Municipal planning

PAPER NO. 10: NEW ZEALAND

ELEMENTS, SCOPE AND PRIORITIES FOR WORK UNDER THE TWO NEW AGENDA ITEMS ON THE SCIENTIFIC, TECHNICAL AND SOCIO-ECONOMIC ASPECTS OF IMPACTS, VULNERABILITY AND ADAPTATION, AND MITIGATION

Introduction

This submission is in response to FCCC/ SBSTA/ 2003/ L.15 paragraph 4. New Zealand welcomes this initial opportunity to share its views regarding the possible elements, scope and priorities for work under the two new agenda items on the scientific, technical and socio-economic aspects of impacts, vulnerability and adaptation, and mitigation, including the possible links of adaptation and mitigation to the objectives of the Convention and sustainable development.

We note that a parallel discussion on future methodological work, including provision of technical information, is occurring under the SBSTA agenda item on the review of methodological work under the Convention and Kyoto Protocol (FCCC/ SBSTA/ 2003/ L.8). Some of the work under the two new agenda items on adaptation and mitigation will probably also be discussed under the review of methodological work. It will therefore be important during SBSTA 19 and 20 that those different agenda items work closely together to avoid duplication and ensure an efficient use of SBSTA resources.

Our submission covers firstly specific work elements, scope and priorities of the two new agenda items, including an initial consideration of how those elements could contribute to the wider objectives of the Convention. Where appropriate, we indicate the broad area of the IPCC Third Assessment Report that provides relevant scientific, technical and socio-economic information on these subjects. We then discuss options to align these agenda items with other areas of work of the SBSTA and SBI. Finally we outline a process which we believe will be most productive and efficient to begin the substantive work within those two new agenda items.

Elements of the new agenda item on impacts, vulnerabilities, and adaptation

New Zealand considers that the prime focus for work under this agenda item by SBSTA should be on the exchange of information and experiences regarding tools and institutional arrangements in assessing impacts, vulnerability and adaptation responses, the role of technology and its efficient transfer, and decision-making support systems. New Zealand also notes that all Parties provide information in their national communications on impacts, vulnerabilities and adaptation. This information is part of the basis for consideration of further work in this area.

While primary scientific information about future climate change and impacts is an important ingredient in assessing vulnerabilities and designing adaptive responses, the production of the underpinning scientific knowledge and specific technologies is by and large carried out by the scientific and technical community. While SBSTA can encourage further scientific work in this area and identify priorities, it is not in a position to assess or direct the development of scientific knowledge.

The SBSTA should therefore primarily assist Parties in sharing experiences with the implementation of relevant scientific information and the application of technology and decision-making tools. In particular, New Zealand would consider it most valuable if SBSTA were to focus its attention to the following key themes and topic areas:

- ***Methodologies and tools for regional climate projections:*** The SBSTA should provide opportunities for Parties to share information and experiences on:
  - methodologies and tools for regional climate projections, based on models evaluated by the IPCC and other relevant scientific organisations,
  - capacity required to apply this information in national decision-making processes,
  - how knowledge on climate projections can be most effectively transferred to decision-makers at the local level, and
  - how this information can be integrated into standard planning processes.

  (Relevant sections of TAR: WG1 scenarios, regional climate changes and changes in extremes; WG2 on methods, tools and scenarios, and context of sustainable development)

- ***Experiences with institutional capacity and barriers:*** The SBSTA should provide a platform for Parties to share their experiences with institutional capacity and barriers in institutions or legislation regarding implementation of adaptation strategies. The focus should be on helping Parties better understand what constitutes an 'enabling' environment for the timely assessment and consideration of climate change impacts and adoption of adaptation measures at local, national and regional scales.
  (Relevant sections of TAR: WG2 overview, methods and tools, context of sustainable development, and sector- and region-specific chapters)

- ***Mechanisms to integrate climate change adaptation into sustainable development plans:*** Adaptation to climate change forms one element of sustainable development. It would appear unlikely that adaptation to climate change can function successfully without a wider functional framework of sustainable development strategies and their implementation. The SBSTA should provide a platform for Parties to share information and experiences of how climate change can be most effectively integrated into such wider sustainable development plans and specific projects.
  (Relevant sections of TAR: WG2 overview, sector-specific chapters, and context of sustainable development, SYR Q1/6/8)

- ***Comparison of vulnerabilities to different pressures:*** Development can be impeded by a range of vulnerabilities and environmental pressures. To adequately focus resources, it is necessary to compare future vulnerabilities and assess priorities for action. The SBSTA should, through organising workshops and requesting reports from other relevant organisations, assist Parties to better understand the relative pressures and vulnerabilities created by climate change in the context of other long-term developments.
  (Relevant sections of TAR: WG2 overview, scenarios, and context of sustainable development, SYR Q1/6/8)

- ***Benefits and risks of early decision-making:*** Inertia in the climate, environmental, and socio-economic systems is one of the key reasons why anticipatory adaptation can be beneficial. At the same time, early action under incomplete knowledge may also create unnecessary costs. The SBSTA should develop frameworks to help Parties identify those situations where early and anticipatory adaptation is most beneficial and necessary to avoid lock-in of future vulnerabilities, and to distinguish from those situations where adaptation can more effectively happen as a sequential decision-making process over longer time periods.
  (Relevant sections of TAR: WG1 on projections of future climate change, regional climate changes and changes in extremes; WG2 context of sustainable development, SYR Q5/6)

- ***Opportunities arising from climate change:*** Climate change can have beneficial effects for some sectors in the short term. While clearly the management of risks arising from climate change will be of higher importance to many national decision-makers, we consider it useful for SBSTA to discuss how businesses and local communities can make use of positive opportunities where they exist, and what information, tools, and

institutional arrangements are necessary to most effectively enable positive and sustainable responses to such opportunities.
(Relevant sections of TAR: WG2 sector- and region-specific chapters, SYR Q6)

- ***Cost-benefit frameworks for assessing costs of impacts, adaptation and residual risks:*** Decision-makers need to decide what degree of adaptation to expected impacts is most cost efficient, and how to balance the cost of adaptation against the cost of residual impacts. In this context, 'costs' should not be limited to monetary or market costs but need to include social and environmental costs as well. The SBSTA should organise workshops, request other organisations to prepare reports, and share information through side events on such assessment frameworks and provide a platform for Parties to share their experiences and practices.
(Relevant sections of TAR: WG2 overview, methods, tools and scenarios, and context of sustainable development, SYR Q1/4/5/6/8)

- ***Regional identification of key vulnerabilities:*** Scientific knowledge is as yet insufficient to define across all Parties what may be regarded as "safe" limits to greenhouse gas concentrations, or what would constitute dangerous interference with the climate system. However, it would be beneficial for Parties to share their views on what degree of climate change and related impacts would constitute, on a regional basis, a key vulnerability relative to baseline trends. Such information would be useful to inform further scientific research to identify the likelihood, biophysical mechanisms, regional climate projections, and monitoring systems required to better understand such key vulnerabilities.
(Relevant sections of TAR: WG1 on projections of future climate including sea level, regional climate changes and changes in extremes; WG2 regional chapters and synthesis of reasons for concern, SYR Q4/5/6)

Elements of the new agenda item on mitigation

New Zealand would like to see SBSTA facilitate the sharing of information and experiences in the implementation of mitigation strategies in the context of the commitments of all Parties under the UNFCCC and obligations of Parties under the Kyoto Protocol, as well as the wider and long-term objectives of the Convention that could inform future commitments through the development of hedging strategies. This agenda item should also draw upon the information provided by all Parties in their national communications.

In particular, New Zealand suggests that the SBSTA should facilitate work on:

- ***Comprehensive cost-benefit frameworks including no-regrets analysis:*** Cost-benefit frameworks for mitigation action need to include ways to identify and quantify co-benefits including flow-on effects of technology transfer for industrial development, and ways to integrate social and environmental impacts over different time frames into economic assessments. Such comprehensive cost-benefit frameworks are particularly important to help Parties and individual stakeholders identify no-regrets or win-win approaches to mitigation, since the direct positive effects of mitigation will often be expressed as co-benefits rather than direct energy savings alone. The SBSTA could provide a platform to share knowledge and experiences through side events, encouragement and presentation of case studies in reports, and facilitation of regional workshops with appropriate expert participation.
(Relevant sections of TAR: WG3 costing methodologies, regional and sectoral costs and ancillary benefits, and decision-making frameworks)

- ***Hedging strategies to inform near-term mitigation targets in the context of long-term uncertainty:*** There is a growing body of literature that investigates the way to which hedging strategies can inform near-term mitigation targets (i.e. out to about 2020) in the context of uncertainty over long-term goals. These studies generally look at global near-term mitigation targets that would need to be achieved to keep future options for decisions

on long-term targets open (such as, for example, eventual stabilisation of CO2 at 450ppm). Conversely, such hedging strategies can identify long-term options that will be lost if certain near-term targets are not reached. It would be useful for SBSTA to support and disseminate analytical work carried out in this area through commissioning of reports and organisation of side events.
(Relevant sections of TAR: WG3 link with sustainable development, technological and economic potential of GHG emission reduction, GHG mitigation scenarios)

- ***Link of mitigation framework with sustainable development plans, description of decision steps that lead to carbon decoupling:*** Experience in many developed countries has shown that economic growth does not necessarily have a linear relationship with greenhouse gas emissions, but that there can be distinct carbon decoupling steps that lead to economic growth with a lesser or no increase in greenhouse gas emissions. The SBSTA should encourage additional work and reports by relevant organisations to help Parties better understand these decoupling steps, what institutional or technological decisions and circumstances trigger them, and how they fit within broader frameworks of sustainable development and technological transformation of economies. We suggest that reports, regional workshops and side events would be effective mechanisms to increase knowledge, disseminate information and assist Parties in sharing their experiences in this area.
(Relevant sections of TAR: WG3 link with sustainable development, technological and economic potential of GHG emission reduction and carbon storage, GHG mitigation scenarios, decision-making frameworks)

- ***Information exchange on Kyoto implementation:*** The SBSTA should provide a platform through workshops and side-events for all Parties to share their experiences in implementation of Kyoto policies, measures and mechanisms, and their links with other environmental and economic policies. New Zealand notes that National Communications also provide a mechanism in which Parties could be encouraged to further report on their experiences. The SBSTA should further encourage Parties and relevant organisations to study and report on experiences with the efficiency and transaction costs of early trading schemes and industry responses to assist future analytical work regarding the cost of mitigation as represented in macroeconomic models.
(Relevant sections of TAR: WG3 policies, measures and instruments, and barriers, opportunities and market potential, national and sectoral costs and ancillary benefits of mitigation)

- ***Inducing behavioural change at the community and individual level:*** It is widely recognised that community education and awareness can be key ingredients in changing emission profiles in some sectors, in particular transport. The SBSTA should encourage further work by scientific organisations on the social science aspects of reduction of greenhouse gas emissions, and assist in the dissemination and discussion of this information through the request for specific reports from organisations and presentation of their findings in side events. We note that this work also has strong links to the work programme under Article 6 of the Convention, and the SBSTA may wish to explore opportunities to assist Parties to share their experiences and outreach material.
(Relevant sections of TAR: WG3 link with sustainable development, national and sectoral ancillary benefits of GHG mitigation)

- ***Institutional capacity:*** The SBSTA should discuss institutional capacity issues in the design and implementation of mitigation strategies, including institutional opportunities and barriers to the promotion of no-regrets action.

- *(*Relevant *sections of TAR: WG3 barriers, opportunities and technological potential of technologies and practices, policies, measures and instruments, and decision-making frameworks)*

- ***Strategies, policies and supporting measures for small-to-medium sized enterprises:*** Small-to-medium sized enterprises make up a substantial fraction of the economic activity in most countries, yet because of their diversity, policies and assistance to reduce emissions associated with their activities tend to be difficult to design and implement. At the same time, co-benefits from mitigation measures, if properly designed, could be large and serve as examples for implementation of no-regret actions. It would be useful for the SBSTA to explore the opportunities and experiences of Parties and industry groups through workshops and side events directed at this sector.
  (Relevant sections of TAR: WG3 barriers, opportunities and technological potential of technologies and practices, policies, measures and instruments, and sectoral costs and ancillary benefits of GHG mitigation)

Cross-cutting issues

SBSTA previously noted that both adaptation and mitigation can contribute to the objectives of the Convention and sustainable development (FCCC/SBSTA/2003/L.15 para 6), and agreed to consider these possible links in the development of its work programme for these two new agenda items. New Zealand would like to point out two areas in particular where both adaptation and mitigation, despite limited scientific knowledge and experience, can jointly contribute to and inform the work of SBSTA.

These two areas are the development of hedging strategies in mitigation related to regional limits to adaptive capacity and key vulnerabilities, and the links of climate change generally with other environmental problems or development issues.

- ***Linking hedging strategies with regional adaptive capacity and key vulnerabilities:*** Scientific knowledge at present appears insufficient to decide on a long-term target for greenhouse gas concentrations that would avoid dangerous anthropogenic interference with the climate system on a global basis. Such a decision would require more scientific knowledge, reduced uncertainty, and more experience in the costs of mitigation, adaptive capacity, and treatment of global equity issues.
  Nonetheless, many regions may be able to identify possible climate change impacts that would generate key regional vulnerabilities that exceed adaptive capacity. On a regional basis, such impacts and the global climate change that would likely cause such impacts can be used to identify thresholds of “safe” climate change on a regional basis. Such threshold levels can in turn be related to greenhouse gas concentrations where such impacts would likely be avoided, including an exploration of the uncertainties and time scales involved.
  This analysis of greenhouse gas concentrations to avoid regional damages, including the associated uncertainties and long time frames, can in turn inform the development of near-term mitigation hedging strategies that keep long-term targets open.
  New Zealand would therefore consider it useful if the SBSTA organised workshops and side events, and requested additional information from scientific and development organisations, that enable Parties to draw the link between mitigation hedging strategies and regional key vulnerabilities.
  (Relevant sections of TAR: WG1 on projections of future climate including sea level, regional climate changes and changes in extremes; WG2 regional chapters and synthesis of reasons for concern, WG3 link with sustainable development, technological and economic potential of GHG emission reduction, GHG mitigation scenarios, SYR Q4/5/6/7)

- ***Link of climate change with other environmental and development issues:*** It is becoming increasingly clear that climate change is intrinsically coupled with other environmental and development issues which are being addressed by multilateral frameworks and conventions as well as by national action plans. Examples include air

quality, biodiversity, human health, nutrition and food security, water resources and regional use, protection of the ozone layer, forestry agreements, and scientific and technical research and development plans.
The SBSTA should increase its efforts to actively explore the role of climate change, specifically the scientific, technical and socio-economic dimensions of adaptation and mitigation, in those other environmental and development issues. The SBSTA should attempt, through the production of joint reports and working groups, to identify regional or global synergies between addressing climate change and meeting other challenges of environmental management and sustainable development.
(Relevant sections of TAR: WG2 context of sustainable development, ecosystems, hydrology, coastal zones, settlements and financial services, WG3 link with sustainable development, GHG mitigation scenarios, SYR Q6/7/8)

Link of work elements with other agenda items of SBSTA and SBI
New Zealand believes that the two new agenda items provide an important mechanism to allow Parties to learn more about the scientific, technical and socio-economic aspects of climate change impacts, vulnerability and adaptation, and mitigation, to share their experiences in practice, and to identify knowledge gaps that needs to be addressed by the scientific and expert practitioner community. Because scientific knowledge, technology and socio-economic dimensions underpin all work related to climate change adaptation and mitigation for all Parties, there are important overlaps between work under the two new agenda items and existing agendas of SBSTA and SBI.

In particular, New Zealand would like to point out the link between the work programme covered here, and the review of methodological work under the Convention and Kyoto Protocol (FCCC/ SBSTA/ 2003/ L.8). New Zealand suggests that these three contact groups hold a joint session at SBSTA-20 to identify overlaps and synergies between the work programmes developed under each of those agenda items.

Other important links exist between the scientific, technical and socio-economic aspects of adaptation as outlined above in our submission, and funding mechanisms and priorities under the Convention and Kyoto Protocol to assist developing countries in addressing the risks of climate change that are being covered by SBI. New Zealand suggests that it would be useful to incorporate findings and experiences arising from the work of the new agenda item on the scientific, technical and socio-economic aspects of adaptation to climate change into the future work of the SBI, and that this could be most productively done through regular joint pre-sessional meetings beginning from SB-21.

Framework for undertaking initial work under the two new agenda items
Much of the information on the scientific, technical and socio-economic aspects of climate change impacts, vulnerability and adaptation, and mitigation, is new or being developed through emerging themes of research. Consequently, New Zealand believes that it would be most productive and efficient for SBSTA to encourage the development of new knowledge, disseminate information, and assist Parties in sharing their regional experiences. We suggest that this can most usefully be done through requesting reports and technical papers from relevant regional, international or intergovernmental expert organisations, through workshops, regional forums and side events, and tasking the Secretariat with the preparation of appropriate summaries and option papers.

Formal sessions of the SBSTA under the two new agenda items should be used primarily to allow Parties to provide feedback on those events and share their experiences, encourage outside organisations to provide specific reports or undertake additional research, and request the Secretariat to prepare appropriate papers.

A framework for prioritising work under the two new agenda items

With regard to priorities of the work elements outlined above, New Zealand believes that the following three criteria be used to evaluate the suggestions by all Parties and focus the work of the SBSTA in the near future. Firstly, work programmes that take a long time to mature or develop new knowledge should be initiated early through requests to appropriate organisations outside of SBSTA. Secondly, underpinning work that is of relevance to all Parties and that will assist Parties in making further progress towards the ultimate objective of the Convention should take precedence in decisions on the work programme. Thirdly, work and information that is not covered anywhere else (either under other agenda items of SBSTA or SBI, or other relevant organisations), or where SBSTA and SBI and their reporting mechanisms provide unique opportunities for information sharing, should be given a high priority. To help set its immediate priorities, the SBSTA should focus on work items that satisfy all three criteria.

PAPER NO. 11: SUDAN

SUBMISSION BY SUDAN

Sudan coordinates for the African group on these agenda items

Views on the elements, scope and priorities of the future SBSTA work under the two new agenda items of the IPCC TAR:

- Scientific, technical and socioeconomic aspects of, impacts of, and vulnerability and adaptation to climate change
- Scientific, technical and socioeconomic aspects of mitigation

Future work by the SBSTA on the IPCC TAR could focus more closely on available information and knowledge about different emissions scenarios and the associated economic, social and environmental implications. With the aim to assess the effectiveness costs and benefits of impacts, adaptation, mitigation of climate change and the implications in case of no action is taken. The scope of the work of the SBSTA under the two new agenda items may include:

- SBSTA should make use of the information and knowledge contained in the IPCC TAR and other relevant sources to inform and support, the, decisions and actions by the COP and parties according to their common but differentiated responsibilities particularly those delayed actions on adaptation to the impacts of extreme events and climate change
- SBSTA should explore and assess the completeness and relevance of the information contained in the TAR for taking action by the COP
- SBSTA may use available information to prepare policy relevant documentation (e.g. briefs) that support the implementation of the convention
- SBSTA should define the gaps in the information and knowledge that need to be considered by the IPCC in its future assessment work

The elements of the work by SBSTA under these two new agenda items should include, inter alia:

Vulnerability, Impacts and Adaptation

- Enhance the regional and national technical capacity to assess vulnerability, impacts and adaptation
- Identify the needs of developing countries for adaptation technologies that build resilience and adaptive capacity
- Improve knowledge of sustainable livelihood and adaptation to extreme events and climate change
- Increase the focus on local adaptation measures
- Understand the implication on natural resource and water management
- Improve methodology and tools for impacts and adaptation analysis
- Define methods for baseline adaptation (additionality and cost implications)
- Identify gaps in local lines of evidence, and the most vulnerable sectors and systems (workshop is needed to address methods applications at national and regional level).

- Assess the cost of the impacts of climate change including, variability and extremes. And cost of adaptation
- Assess and reduce scientific uncertainty

Mitigation measures

- Integrate mitigation in the context of sustainable development
- Improve knowledge and understanding of the sustainable development path required by the developing countries)
- Enhance regional and local capacity to facilitate technology transfer, through joint research, adaptation and development of local technologies
- Assess the effectiveness of the proposed and applied mitigation measures to implement the convention
- Assess cost and benefits of mitigation measures
- Assess the effect of the response measures
- Inform and assist the development of national strategies
- Address Scientific uncertainty

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