



**UNITED  
NATIONS**



**Framework Convention  
on Climate Change**

Distr.  
LIMITED

FCCC/SBSTA/2008/L.22  
9 December 2008

Original: ENGLISH

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**SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE**  
Twenty-ninth session  
Poznan, 1–10 December 2008

Agenda item 3  
Nairobi work programme on impacts, vulnerability and adaptation to climate change

**Nairobi work programme on impacts, vulnerability and  
adaptation to climate change**

**Draft conclusions proposed by the Chair**

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA) welcomed the progress made up to its twenty-eighth session in the implementation of the Nairobi work programme on impacts, vulnerability and adaptation to climate change, and took note of the report on the workshop on climate modelling, scenarios and downscaling,<sup>1</sup> two technical papers<sup>2</sup> and the progress report for the period between its twenty-eighth and twenty-ninth sessions.<sup>3</sup>
2. The SBSTA recognized the catalytic role of the Nairobi work programme and expressed its appreciation to the organizations that have undertaken, or have stated their intention to undertake, actions in support of the objective of the Nairobi work programme. It encouraged these organizations to further enhance their efforts towards this end, including through the submission of action pledges. The SBSTA noted that the activities undertaken by these organizations have furthered the understanding of scientific and technical knowledge under the nine areas of work of the Nairobi work programme.
3. The SBSTA highlighted the importance of, and further potential for, partnerships and dialogue between users and providers of information relevant to adaptation in order to advance understanding of measures that can be easily and effectively utilized by decision makers.
4. The SBSTA noted with appreciation the second forum of focal points of organizations and institutions engaged in the implementation of the Nairobi work programme, convened by the Chair of the SBSTA at the present session.

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<sup>1</sup> FCCC/SBSTA/2008/9.

<sup>2</sup> FCCC/TP/2008/3 and FCCC/TP/2008/4.

<sup>3</sup> FCCC/SBSTA/2008/INF.5.

5. The SBSTA considered the possible need for a group of experts and the role that this group could play in the implementation and further development of the Nairobi work programme. It recognized that the UNFCCC roster of experts and the focal points of the organizations and institutions engaged in the implementation of the Nairobi work programme provide valuable sources of expertise. It invited Parties to expand the roster of experts to ensure that all areas of expertise relevant to the Nairobi work programme on impacts, vulnerability and adaptation to climate change are represented, including those which adequately reflect regional and local issues. The SBSTA agreed to continue its consideration of this matter at its thirty-second session.
6. The SBSTA noted with appreciation the summary of the results of the implementation of the Nairobi work programme for the period up to its twenty-eighth session (hereinafter referred to as the summary report).<sup>4</sup> Having considered the current status, gaps, needs and recommendations detailed in the summary report, the SBSTA noted that gaps and needs remain in all nine areas of work.
7. The SBSTA recalled that the outcomes of activities completed up to its twenty-eighth session may contain useful information for Parties in the consideration of relevant agenda items under the Subsidiary Body for Implementation (SBI).<sup>5</sup> It therefore provided the SBI, for its possible consideration as appropriate, with relevant information and advice emerging from the implementation of the first phase of the Nairobi work programme, as contained in the annex.
8. The SBSTA requested the secretariat, under the guidance of the Chair of the SBSTA, to consider the relevant information contained in the summary report when implementing the mandated activities of the Nairobi work programme during its second phase. It also requested its Chair to facilitate the consideration of this information in the work of the SBSTA under other relevant agenda items, as appropriate, at its future sessions.
9. The SBSTA invited Parties, relevant organizations and other stakeholders, including those participating in the implementation of the Nairobi work programme and other related activities, to consider the relevant information contained in the summary and underlying reports<sup>6</sup> in their activities, and to share the outcomes of these activities with the SBSTA.

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<sup>4</sup> FCCC/SBSTA/2008/12.

<sup>5</sup> FCCC/SBSTA/2008/6, paragraph 21.

<sup>6</sup> Underlying reports refer to the documents used in the preparation of the summary report, as indicated in that report.

Annex

[ENGLISH ONLY]

**Relevant information and advice emerging from the implementation of the Nairobi work programme on impacts, vulnerability and adaptation to climate change in its first phase**

1. This annex contains relevant information and advice on the scientific, technical and socio-economic aspects of impacts, vulnerability and adaptation to climate change emerging from the implementation of the first phase of the Nairobi work programme on impacts, vulnerability and adaptation to climate change.<sup>1</sup> It is noted that the implementation of the second phase of the Nairobi work programme takes into consideration the information contained in this annex, where relevant.<sup>2</sup>

*Methods and tools*

2. Integrated assessments are viewed as a useful way to comprehensively assess social, economic and environmental impacts of climate change, accounting for the interaction between climate change and other processes.

3. The existence of numerous gaps and needs prevents methods and tools from being widely disseminated and applied. Gaps include lack of sufficient data, capacity, proper information and guidance on available methods and tools, including the associated uncertainties and limitations.

4. The identified needs include improved capacity for local and sectoral assessments; integrated assessments at the subnational and national levels; integration of bottom-up and top-down approaches; better quantification of the costs and benefits of adaptation; and user-specific guidance on the application of the many available methods and tools.

5. Means for enhancing the dissemination of methods and tools include establishing and strengthening existing user networks to share expertise and experiences in the application of methods and tools; and establishing mechanisms to enable the comparison of methods and tools.

*Data and observations*

6. There is a general understanding that the major challenge with regard to data and observations is not necessarily establishing an observation network, but rather maintaining it on a long-term and sustained basis after external funding ceases, and sharing the resulting data.

7. Identified data needs, particularly in developing countries, include the need for support for data collection and recovery of historical data, the need to improve the collection, management and use of data at the regional level, and the need for enhanced access to global, regional and national data.

8. In terms of observations, there is a need to improve systematic observation and monitoring systems in order to better understand the impacts of climate change, including by expanding coverage and increasing density, and for raising awareness among policymakers of the need for strengthened national meteorological and hydrological services.

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<sup>1</sup> The information and advice is drawn from document FCCC/SBSTA/2008/12.

<sup>2</sup> The activities to be undertaken during the second phase of the Nairobi work programme are contained in document FCCC/SBSTA/2008/6, paragraphs 10–74.

9. Human capacity for analysing and generating data also needs to be built through training and education programmes, including improving understanding of uncertainties associated with the use of data and models.

10. Means for improving the capacity for collecting, managing and using observational data include undertaking a comprehensive stocktaking of the climatic and non-climatic data holdings at the national level and, based on this assessment, developing integrated management and collection systems capable of providing the information required for adaptation.

*Climate modelling, scenarios and downscaling*

11. Advances have been made in the methods for downscaling, model resolution, the simulation of processes of importance for regional change and in expanding the set of available simulations.

12. Gaps remain with respect to spatial and temporal resolution and uncertainties of scenarios and model outputs. These gaps have put constraints on the development of regional/subregional climate scenarios aiming at supporting policy-relevant impact and vulnerability assessments. Capacity-building is needed to understand the context and limitations of climate model outputs given the variety of assumptions on which models are based. There is also a need for a dialogue between the climate science community and adaptation practitioners, including policymakers, with a view to determining requirements and parameters for modelling activities so that model outputs become more policy-relevant.

13. Means for enhancing the development of regional and subregional climate scenarios include promoting regional centres and networks to ensure smooth knowledge sharing and transfer, collaboration on scenario development using various models, and capacity-building at regional and national levels.

14. Efforts to quantify and reduce uncertainty within and across models should be continued in order to increase the accuracy of future projections and the representation and communication of uncertainties should be improved to ensure credibility of model outputs and climate data.

*Climate-related risks and extreme events*

15. One of the lessons learned is that the disaster risk reduction approach to risk assessment should be taken, as it focuses on the prediction and reduction of impacts.

16. Traditional knowledge can complement other scientific sources of knowledge. Greater integration and use of such knowledge is needed in the assessment and management of climate-related risks, particularly through partnerships with grass-roots organizations.

17. Gaps remain relating to the assessment, prediction and management of climate-related risks and impacts, including uncertainties in the prediction of climate variability and extreme events and a lack of response systems for identified risks. Needs identified include better integration of disaster risk reduction and adaptation to climate change into national sustainable development policies and plans, and better methods and tools to predict, manage and reduce impacts. Another gap is the limited availability and accessibility of risk-sharing mechanisms, such as insurance, in the most vulnerable countries.

18. Means for enhancing the assessment and prediction of climate-related risks and impacts include better provision of data at the national, regional and global levels, and continuous access for users to relevant data archives and databases.

*Socio-economic information*

19. Socio-economic information can highlight the different exposures to climate threats and the adaptive capacities of regions, countries and communities.

20. Socio-economic information lags behind biophysical and meteorological information in terms of quality, availability and accessibility. A major gap is the lack of spatially differentiated socio-economic information, especially at the subnational scale. Even when socio-economic information is available, its applicability for adaptation planning is limited. Data are often collected in inconsistent formats, disseminated on aggregate scales, dispersed in terms of their location, and not available in formats usable for vulnerability and impact assessments and adaptation planning. Further efforts are needed to improve the integration of qualitative socio-economic information into assessments.

21. Means for integrating socio-economic information into impact and vulnerability assessments include developing an open dialogue between providers and users of information in order to tailor information to specific data needs, developing guidance on the use of existing data and packaging the information so that it is of relevance to the decision-making processes, and developing information on costs and benefits of adaptation options.

#### *Adaptation planning and practices*

22. Lessons learned include using current exposure to natural hazards and climate variability as an entry point for adaptation; using case studies and guidelines to engage stakeholders; and the importance of understanding, valuating and incorporating indigenous and local knowledge and technologies.

23. Despite some advances many gaps and needs remain. For example, there is a gap between adaptation assessment and planning, on the one hand, and implementation on the other. This is due to a number of constraints including lack of capacity, data, information and resources. Uncoordinated sectoral responses can be ineffective or even counterproductive because responses in one sector can increase the vulnerability of another sector and/or reduce the effectiveness of adaptation responses taken in that sector. Hence there is a need to adopt a cross-sectoral approach to adaptation as part of an overall sustainable development strategy.

24. Conceptual frameworks for adaptation could assist in identifying the range of available adaptation options while at the same time providing for flexibility and redesign of options as more clarity emerges regarding the level of change or impacts to which different sectors and levels need to adapt.

#### *Research*

25. Needs identified regarding understanding impacts and vulnerabilities include reducing uncertainty in the sensitivity of the climate system, enhancing the connections between General Circulation Models and regional models to improve the performance of regional climate change models, and enhancing the validation of climate models with observations of essential climate variables.

26. In terms of facilitating adaptation planning and implementation, research needs include understanding and reducing economic, technical, social and institutional barriers to adaptation as well as better understanding of various adaptation options, including through identifying and assessing costs, benefits and potential trade-offs. Efforts also need to be made to develop adaptation scenarios for different greenhouse gas stabilization levels and assumptions.

#### *Technologies for adaptation*

27. Technologies for adaptation include hard technologies, such as drought-resistant crop varieties, seawalls and irrigation technologies, or soft technologies, such as crop rotation patterns. Many technologies have both hard and soft characteristics, and successful adaptation action would typically combine the two.

28. Traditional technologies and know-how are key to technologies for adaptation; they already exist and are suitable for many developing countries, and they can potentially be improved by local communities.

29. Many gaps and needs remain which constrain the widespread application of technologies for adaptation. Needs include building adequate human, technical and institutional capacity to diffuse and employ technologies; improving information and awareness-raising among all stakeholders, including communities; and providing sufficient financial resources.

*Economic diversification*

30. Concerns exist over the difficulty of undertaking economic diversification, particularly in countries where national circumstances make alternative economic activities difficult.

31. Public participation is needed in all the processes that increase resilience of, and decrease reliance on, vulnerable sectors; in this regard the private sector plays a key role.

32. Gaps and needs include the need for improved tools for modelling and assessment of vulnerability to climate change impacts in the context of economic diversification. There is a lack of models that link predictions of physical impacts to input–output models in order to assess sectoral vulnerability, although these are necessary for effective economic diversification.

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