POTENTIAL FUTURE AREAS OF WORK OF THE NAIROBI WORK PROGRAMME

VIEWS FROM THE SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY

The Secretariat of the Convention on Biological Diversity (CBD) is pleased to present the following submission on potential future areas of work of the Nairobi work programme on impacts, vulnerability and adaptation to climate change (NWP) as called for in Decision 6/CP.17.

The Secretariat draws attention to the relevant work already undertaken under the CBD. This includes a technical assessment prepared by the CBD Second Ad hoc Technical Expert Group on Biodiversity and Climate Change published as CBD Technical Series No.41[1]. On the basis of this, the Conference of the Parties adopted relevant guidance in its decision X/33 paragraph 8.[2]

This submission is based on obstacles, gaps and areas for further action with regards to the links between biodiversity and climate change identified by Parties to the CBD[3] as well as the CBD Second Ad hoc Technical Expert Group on Biodiversity and Climate Change.

In summary, the Secretariat of the CBD suggests that the NWP may wish to consider the following future areas of work:

- Producing technical papers on (1) the economic, health and other impacts of climate change on biodiversity based livelihoods, and strategic options for adaptation and resilience, (2) measures to enhance adaptation including the potential risks, benefits and limitations of assisted migration and (3) gender and adaptation;
- Issuing a call for action on improved bioclimatic modeling;
- Convening an expert group on traditional knowledge, innovations and practices and climate change impacts and vulnerability;
- Calling for further submissions of case studies on (1) climate change adaptation for biodiversity and (2) the application of Strategic Environmental Assessments and Environmental Impact Assessments within climate change adaptation;
- Ensuring that any follow-up to the workshop on ecosystem-based approaches to adaptation fully considers trade-offs.

In order to facilitate consideration of the above suggested future areas of work the following document has been prepared concerning impacts and vulnerability (Section 1), climate change adaptation (Section 2), and enhanced stakeholder participation (Section 3).

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[1] http://www.cbd.int/doc/publications/cbd-ts-41-en.pdf

[2] http://www.cbd.int/doc/decisions/cop-10/cop-10-dec-33-en.pdf

[3] Refer to document UNEP/CBD/SBSTTA/16/9: Proposals on Integrating Biodiversity Considerations into Climate Change-Related Activities, Including Addressing Gaps in Knowledge and Information, http://www.cbd.int/doc/meetings/sbstta/sbstta-16/official/sbstta-16-09-en.pdf ; and SBSTTA recommendation XVI/8: http://www.cbd.int/doc/recommendations/sbstta-16/sbstta-16-rec-08-en.pdf

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1. Impacts and Vulnerability

Economic Analysis

Significant advances have been made recently in quantifying the value of ecosystems and their biodiversity, but these values are not yet widely incorporated into climate change impact assessments. As such, there is scope for additional work on the costs of biodiversity loss within the evaluation of climate change impacts and vulnerability. This includes the need for additional information on the impacts of climate change on biodiversity-based livelihoods.

This could be supported by the NWP through a technical paper on the economic impacts of climate change on biodiversity based livelihoods including an analysis of literature on the contribution of biodiversity to reducing impacts and vulnerability.

Improved Access to Data

Although our understanding of the impacts of climate change on biodiversity has improved significantly, further efforts to assess impacts are hampered by a lack of baseline data on biodiversity and climate change, especially within developing countries. Specific data needs include:

i. spatially explicit biodiversity data;
ii. readily available downscaled probabilistic projections of climate change, including projections of extreme events and changes in temperature and precipitation patterns;
iii. information on the magnitude of the CO_2-fertilization effect in the terrestrial and marine biosphere and its components over time; and
iv. global-scale satellite monitoring programmes capable of tracking species-level responses to climate change.

As the data needed in this regard is linked to work under both the CBD and the NWP, there is scope for enhanced collaboration between the two processes concerning the aggregation and dissemination of data and calls for action for future research. This enhanced collaboration could be further explored through the Joint Liaison Group of the Rio Conventions.

Biodiversity and Bioclimatic Models

Modelling impacts and vulnerability continues to improve however the predictive ability of bioclimatic models requires improvement. In particular:

i. The projections of bioclimatic models should be formally tested against observed species range shifts;
ii. Models that take into account the interactions between species, and between trophic levels should be further elaborated and used;
iii. Climate-change impact assessments should optimally be integrated with assessments of other stressors to ecosystems;
iv. Improvements are needed in the integration of feedback mechanisms in order to address differences between modeled changes and observed impacts;
v. Models linking climate change and ecosystems can also be coupled to models of human behaviour and decision-making, thus representing key interactions between social and ecological systems.

The NWP could support the above through issuing a call for action to enhance bioclimatic models and through preparing, with the World Meteorological Organization, options for addressing the above gaps for the consideration of partners and Parties.

Traditional knowledge, innovations and practices

Observations from indigenous and local communities and other vulnerable groups often form an important component of impact and vulnerability assessments. In particular, such observations are often able to identify early impacts and can build on many years of knowledge and experience where scientific records may not exist or may be inaccurate.

The NWP could promote the enhanced integration of traditional and local knowledge within climate change impact and vulnerability assessments with free prior and informed consent and with the full and effective participation of indigenous and local communities.
Examples of supporting activities include:

i. Promote the documentation and validation of traditional knowledge, innovations and practices;
ii. Revitalize traditional knowledge, innovations and practices on climate change impacts on traditional biodiversity-based resources and ecosystem services through education and awareness-raising, including in nomadic schools;
iii. Explore uses of and opportunities for community-based monitoring linked to decision-making, recognizing that indigenous people and local communities are able to provide data and monitoring on a whole system rather than single sectors based on the full and effective participation of indigenous and local communities.

In order to achieve the above, the NWP could convene an expert group on traditional knowledge, innovations and practices and climate change impacts and vulnerability and strategic options for adapation.

2. Climate Change Adaptation

Mainstreaming actions for biodiversity adaptation

Ecosystem-based approaches to adaptation are increasingly being recognized within climate change adaptation plans and programmes, however such approaches are only sustainable if steps are taken to ensure that the biodiversity delivering relevant ecosystem services is able to adapt to climate change. Furthermore, biodiversity has significant value beyond adaptation that should be preserved through biodiversity adaptation plans.

The NWP could continue to explore and build awareness of steps that can be taken to improve the adaptive capacity of biodiversity in light of the projected negative impacts of climate change including through:

i. Restoring or rehabilitating fragmented or degraded ecosystems;
ii. Ensuring that ecosystem-based approaches to climate change help biodiversity adapt to climate change in addition to people and societies;
iii. Preserving and enhancing protective ecosystem services so as to demonstrate the value of such ecosystems;
iv. Ensuring that any use of renewable natural resources is sustainable under the impacts of climate change.

This could be accomplished through encouraging the submission of geographically well distributed case studies and good practice examples in (i) providing beneficial conditions for natural adaptation of species and ecosystems; (ii) adapting restoration practices to respond to climate change; (iii) the assisted relocation of species affected by climate change, and (iv) the *ex situ* conservation of biodiversity that is unable to adapt to climate change.

Improve the understanding of assisted migration

In some cases, biodiversity may not be able to persist in current habitats under changing climate conditions. Although the natural response of species will include shifting habitats, some species will not be able to move as a result of either low mobility or high isolation. In such cases, assisted migration may be considered as an option. However, although in some instance they may be the only viable option, there are limitations, risks, uncertainties, and often high costs associated with assisted relocation techniques.

Relocated species become "introduced" species to the new habitat, with potential to cause negative impacts on indigenous species. Such impacts, which may include disruptions of predator-prey interactions or symbiotic interactions, changes in parasitism rates and potential competition with existing species for limited resources, need to be assessed in advance of any relocation intervention. In order for relocation to be successful it will often be necessary to move many individuals into the new area at once – increasing the possibility of ecosystem disruption at the new spot. It is also likely that not just one species needs to be relocated but rather multiple components of ecosystems and this assumes that the necessary functions of the components of a natural ecosystem for species to survive and thrive are understood.

Given the complexity of assisted migration, the NWP may wish to produce a technical paper on assisted migration within the framework of climate change adaptation.

Analyse trade-offs associated with ecosystem-based approaches to adaptation

Ecosystem-based approaches to adaptation may require managing ecosystems to provide particular services at the expense of others. When trade-offs are understood and considered an informed decision can ensure the long-term sustainability of adaptation measures. When trade-offs are unknown or ignored unintended consequences may counteract the positive achievements of investments in ecosystem-based approaches to adaptation.

It is therefore important that decisions to implement ecosystem-based approaches to adaptation consider trade-offs within the broader framework of ecosystem management. As such, the NWP could ensure that the follow-up to the workshop on ecosystem-based approaches to adaptation fully consider trade-offs, including ways and means to assess trade-offs.

Building information and awareness of the impacts of climate change adaptation on biodiversity

Climate change adaptation can have positive, negative or neutral impacts on biodiversity. Improving the understanding of the potential impacts of adaptation activities on biodiversity can support the achievement of multiple benefits and avoid unintended consequences. This can be accomplished through mainstreaming Strategic Environmental Assessments and Environmental Impact Assessments within climate change adaptation.

The NWP may wish to call for submissions on the application of Strategic Environmental Assessments and Environmental Impact Assessments within climate change adaptation.

3. Enhanced Stakeholder Participation

Given that climate change impacts will be felt by all, it is important that, moving forward, the NWP takes concrete steps to ensure the full and effective participation of stakeholders. This requires (i) the identification of relevant stakeholders, including within the private sector; (ii) an understanding of their interests (economic and non-economic); (iii) awareness raising for stakeholders to fully understand projected impacts; (iv) local and, where relevant, regional consultations; and (v) the establishment of a mechanism for reporting and feedback.

Furthermore, given the important role of women in climate change adaptation, the NWP should support gender mainstreaming in adaptation. As such, it is suggested that the NWP produce a technical paper on

gender and adaptation building on the work already undertaken by the Joint Liaison Group to the Rio Conventions and in close collaboration with UN Women.
