Global biodiversity mechanisms: a thematic review of recent developments and future evidence needs

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Climate Change Working Group Report

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JOINT NATURE CONSERVATION COMMITTEE

Global biodiversity mechanisms: a thematic review of recent developments and future evidence needs?

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Climate Change [ppt feedback]

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1. Key implementation requirements

The group felt that on the ground action is needed to apply the resolutions identified by MEAs and associated instruments. By building up a series of good examples (in effect demonstration projects) and applying the principles of adaptive management, a better understanding of how biodiversity contributes to climate change action will be developed. There are strong links to principles developed to promote sustainability through use of the ecosystem approach (see section on EA). A related issue is one of scale; much adaptation action is small scale i.e. at the national or regional level.

Taking a broader look, the needs of the biodiversity agenda need to be integrated into approaches taken to address the impacts of climate change; there is a danger that where the primary focus is on carbon conservation or on water issues (flood protection, security of supply etc) biodiversity may get forgotten. To ensure this does not happen we need to gather the appropriate evidence, including case studies, to demonstrate the linkages.

MEA's that have a species-specific focus are having to rethink the way conservation action is delivered. Traditional use of protected areas and flyways is being challenged by changes in species distribution and by new threats (e.g. drought, food availability etc.) likely to be brought about by climate change. Resilience of the landscape, but in particular of protected areas, was felt to be an area that needs particular focus i.e. to come up with definitions and practical examples of what resilience looks like on the ground.

The group recognised the difficulty inherent in trying to express ecological complexity and uncertainty in a way that lends itself to legislative requirements. There is a need to communicate these concepts in a way that people in other sectors can understand, part of this is a need to

recognise that the biodiversity community can be just as prone to silo-thinking as others and needs to be encouraged to address climate change in a more imaginative way.

Payment for ecosystem services was discussed, in particular in relation to the Reducing Emissions from Deforestation and Forest Degradation (REDD) mechanism being developed under the UN Framework Convention on Climate Change (UNFCCC). Big unresolved issues exist around such mechanisms and their knock-on effects (e.g. see discussion on biofuels report below). Lessons learnt from the process so far should be used to help guide development of similar mechanisms being mooted for other ecosystems and land-uses.

2. Key emerging issues

The group discussed a disparate set of emerging issues and focussed on six in particular.

- The Overseas Territories (OTs) are likely to be disproportionately affected by climate change. The connections between the direct impacts on people and biodiversity are already obvious and will become more so. Representation of the OTs in key negotiation fora needs to be improved.
- Geo-engineering solutions continue to be suggested as a means to address climate change and they often ask for massive interference with the natural environment. Suggestions that have been seen as tractable in the near term include iron fertilisation of the oceans and the use of biochar. The MEA processes may not always be able to respond to these ideas quickly enough to have an early influence but the biodiversity community need to be alert to the proposals and to assess their biodiversity implications.
- Migratory species are likely to be affected by climate change in the near future. There are some tough decisions to be made about where best to spend limited resources to enable populations to survive.
- The group felt that we need to be better able to demonstrate what biodiversity can do 'for' climate change. To date there has been very little direct evidence available and we have had to rely on inference and conjecture (albeit well founded in both theory and practice).
- Ocean acidification is a key unknown when considering conservation effort in this huge domain. The complexities around understanding the physical basis (i.e. the chemistry and consequences for ocean flows) and the biological processes (i.e. species distribution, community structure etc) require concerted effort between the MEA's and other institutions concerned with protection of the seas.
- The group felt that the MEA's have a role in promoting better understanding of the global footprint of measures proposed to address climate change including the likely impact on biodiversity and measures in place to conserve it.

3. Evidence and Research needs

The group discussed broad research areas rather than seeking to focus too narrowly on specific projects.

Further evidence is needed to demonstrate the projected co-benefits between biodiversity and other ecosystem services e.g. carbon storage and sequestration in peatlands. More complex models based on real world evidence need to be developed that move beyond the simple climate envelopes used to date (some work has been done in this field but more is needed).

Connectivity of the landscape, whether to specifically link protected areas or to make the wider countryside more amenable to species movement, has been subject to theoretical thinking for a long

time. The need now is to test the ideas and understand the risks and benefits associated with making the connections.

The impacts of mitigation measures on the natural environment need to be better understood and monitored where they have been implemented. Ocean acidification is a major unknown and requires increased research effort to understand the problem better.

The group felt that the biodiversity MEA community needs to have stronger links with the research community to help ensure that research relevant to its needs is undertaken. One major difficulty in this area is the need for long term, large scale research: something that is expensive to do and thus hard to find support for.

4. The interface between science and policy

The group discussed the need for policy makers to understand the science relevant to their area of work and for scientists to understand what the prime policy questions are. Interdisciplinary work should also be enhanced as research on climate change needs input from diverse areas i.e. social, physical and biological sciences. The group felt that more use could be made of themed meetings between scientists from many disciplines and policy makers across all sectors. To facilitate better understanding also requires clear messages derived from sound science i.e. appropriate interpretation of results against particular policy areas. Two groups were picked out as exemplars of managing the science-policy interface: one global - the Global Strategy for Plant Conservation (GSPC); and one from the UK - the UK Biodiversity Research Advisory Group (BRAG).

The group also felt that better, more imaginative use could perhaps be made of existing instruments e.g. Article 3 of the EC Birds Directive and Articles 5 and 10 of the EC Habitats Directive could be used to enhance connectivity within the wider landscape.

The group felt it was important to effectively communicate what we already know and to keep research summaries fresh and relevant to policy makers.

5. Priorities from global, European and UK perspectives

A key priority identified by the group was how to engage effectively with the UNFCCC. The CBD *adhoc* technical expert group was set up specifically to prepare material suitable for the UNFCCC processes. Issues still remain though around how that work is not only presented (by a member state, by several, by the CBD etc), but then followed up; i.e. how to see the ideas set out developed within the mechanisms of the UNFCCC.

Other means of engagement include use of and further development of existing ideas such as REDD+ as a way of talking about biodiversity issues. A corollary from this is that the biodiversity MEAs need to work well together and, where appropriate, develop common lines. The group recognised the important role the EU has as a key negotiator at MEA meetings. EU policy is also influential, representing as it does a major block of industrialised countries. Policies such the EU climate change and energy package with targets for emissions reduction and increased use of renewable energy sources have proved influential. Economic valuations that look at both climate change and biodiversity (e.g. Stern, TEEB[1]) provide compelling evidence that the natural environment is an ally in countering the effects of climate change. The group also felt that better efforts should be made to facilitate engagement of the Overseas Territories in MEA work.

[1] The Economics of Ecosystems and Biodiversity