

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

Strand Palace Hotel, London 20th May 2009

Summary of Conference Proceedings

May 2009

Visit: <http://www.jncc.gov.uk/MEA-event>



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

London, 20th May 2009

Summary of Conference Proceedings

Participants were welcomed on behalf of the Joint Nature Conservation Committee (JNCC) by Marcus Yeo (Director of Policy and External Resources) who set out the [purpose of the day](#) – to consider the outcomes of recent Conferences of the Parties (CoPs) of a range of Multi-lateral Environmental Agreements (MEAs) in a cross cutting thematic manner, and to think forward how emerging issues, implementation requirements, evidence and research needs, and influencing opportunities can be considered in a UK context. He challenged participants to be bold in terms of how biodiversity conservation can be integrated in their (and others') day to day work.

Session 1: Thematic feedback from the Conventions

Participants were also welcomed by Peter Bridgewater (Chair JNCC), who chaired the first session. Peter placed the day in the context of discussions at the G8 summit in Italy earlier in the year and statements in the [Carta di Siracusa](#) which strongly recognised the importance of ecosystem services to human wellbeing. He emphasised the importance of considering all parts of the UK, including Crown Dependencies and Overseas Territories, in considering how CoP resolutions should be implemented.

A series of presentations to set the scene on the cross-cutting themes of the day followed:

- [Biofuels](#) Jessica Magnus
- [Climate Change](#) Colin Galbraith
- [Invasive alien species & wildlife diseases](#) David Stroud
- [Ecosystem Approach & Ecosystem Services](#) Diana Mortimer
- [Science-Policy Interface](#) Andrew Stott

Session 2: Working groups

Participants then split into groups to discuss the outcomes of the MEA CoPs under the following headings:

- Climate change Chair: Marcus Yeo
- Biofuels Chair: Kieran Power
- Invasive alien species & wildlife diseases Chair: Ruth Cromie
- Ecosystem services Chair: Nick Davidson
- Island issues Chair: Jack Ward
(especially Overseas Territories & Crown Dependencies)

The Science Policy interface was taken as a cross-cutting topic in all the groups, and, reflecting the importance of biodiversity in the Crown Dependencies and Overseas Territories, Island issues was taken as an extra group, as all the themes might be relevant to them.

Each group discussed five key areas to improve delivery across MEAs, namely: implementation requirements; emerging issues; evidence and research needs; the interface between science and policy; and priorities from global, European and UK perspectives.

Following discussion in working groups, participants summarised their discussions in a plenary session chaired by Ian Bainbridge, Head of Ecology, Scottish Natural Heritage. Ian started the feedback session by emphasising that each of the groups had considered complex topics, and that the discussions had considered much useful and usable practice, to enable us all to retake the initiative on behalf of biodiversity.

Climate Change working group report [\[ppt feedback\]](#)

Chair: Marcus Yeo (JNCC)

Participants: Andrew Stott (JNCC), Belinda Hawkins (BGCI), Chris Cheffings (JNCC), Christina Cork (Natural England), Clare Trivedi (RBG Kew), Clive Walmsley (CCW), Colin Galbraith (SNH), David Crawley (JNCC Joint Committee), Deborah Procter (JNCC, rapporteur), Francis Marlow (Defra), Gerardo Fragoso (UNEP-WCMC), Graham Tucker (Institute for European Environmental Policy), Hugh Laxton (UK Nature and Landscape Office), Jane Madgwick (Wetlands international), Michael B Usher (JNCC - Joint Committee), Natasha Ali (RBG Kew), Oliver Payne (Defence Estates), Rachel Garthwaite (Royal Society), Roger Williams (Royal Horticultural Society), Sara Valenti (IUCN Shark Specialist Group), Sergey Dereliev (UNEP/AEWA), Szabolcs Nagy (Wetlands international).

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 *ad hoc* 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, TEEB¹) 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

Biofuels working group report [\[ppt feedback\]](#)

Chair: Kieran Power (Bioenergy and renewable materials team, DECC).

Participants: Ivan Bond (IEED), Peter Brotherton (Natural England), Faith Culshaw (NERC), Stephen Grady (JNCC, rapporteur), Jane Madgwick (Wetlands International), Jessica Magnus (JNCC), Sharon McAuslan (Defra), Paul Rose (JNCC), Andy Swash (Defra).

1. Key implementation requirements

The group felt that although the UK would have liked the current resolutions, decisions and language of the Multilateral Environmental Agreements (MEAs) to have gone further on biofuels, the UK should use the remits agreed to purposefully promote UK goals at different scales (e.g. sub-national through to international). . The UK Government is currently taking a cautious approach to biofuel targets given concerns over gaps in the evidence base in relation to both direct and indirect impacts, highlighted by the Gallagher Review², and recognising the potential for biofuels to have both positive and negative impacts in the natural and social environment, domestically and internationally.

One of the key limiting factors to being able to achieve a sustainable biofuels industry is that the current MEA decisions and resolutions are not robust. They lack the necessary ambition and commitment of Parties to regulate the industry and agree common production standards. Progress to this end, made at the most recent CoPs, has been limited because of the consensus approach to agreeing resolutions and decisions and this will continue. Therefore, the UK should not only fully implement the current MEA obligations but go further and lead by example. Actions could range from increasing the evidence base on the impacts of biofuels on biological diversity through to identifying what the UK can do to further the international debate on biofuels; e.g. in agreeing a set of sustainability criteria and to foster international implementation - a great challenge.

2. Key emerging issues

One of the key emerging issues on biofuels for the MEAs to consider is the need to assess and address the displacement effect on land use as a result of increasing biofuels production. Concerns over Indirect Land Use Change (ILUC), as a result of growing energy crops, have rapidly risen up the policy agenda in recent years and need to be addressed internationally. There is a need to know about what existing land cover is being displaced. ILUC due to growing crops for any bioenergy should be prevented on land important for biodiversity, carbon and water resources, or for local communities. In already cleared areas, correct land use choices are also important to mitigate any further negative impacts i.e. selecting the crops that maximise long-term greenhouse gas savings. The question is being increasingly asked whether biofuels should be treated as a special case or whether the issues that they raise are similar to other concerns within an agricultural sphere: should we be seeking solutions specific to biofuels (and more widely bioenergy) or seeking solutions in a broader agricultural setting through a whole systems approach? The impact of a rising global population raises different, but parallel issues, in terms of land use, land use change and habitat conversion.

The UK should continue working to support the development of sustainability standards at relevant scales. Biofuel production is expanding and there is an urgent need to catch up quickly and implement effective sustainability measures, ideally at the global level. At EU level, there are agreed standards as part of the Renewable Energy Directive and, although basic, they do protect the most

² Renewable Fuel Agency's Gallagher Review of the Indirect Effects of Biofuels
http://www.renewablefuelsagency.org/search.cfm?cit_id=175&widCall1=customWidgets.content_view_1&search_string=gallagher&usecache=false

valuable habitat and carbon-rich areas. The UK now needs to transpose the Directive into national legislation, an important part of national implementation on renewable energy targets, and in doing so contribute to the UK's response to achieving agreed decisions and resolutions of the MEAs.

At a global level there is a pressing, and more difficult, problem: how to agree standards. The UK needs to continue working with the Global Bioenergy Partnership (GBEP)³ and other fora - e.g. the Roundtable on Sustainable Palm Oil (RSPO) and the Roundtable on Sustainable Biofuels (RSB) to develop internationally agreed criteria and indicators, ensuring that all of the MEA issues are addressed.

Another important emerging issue is the need to better understand the impacts of agriculture and energy subsidies (both perverse and positive incentives) on land use at international and national levels. Following evidence from Wetlands International on palm oil production and CO₂, the Netherlands government rescinded all subsidies supporting bioenergy power production that uses palm oil. A lot of work needs to be done to provide the evidence to underpin policies and look at the whole issue of incentives, to establish innovative financial mechanisms and inventive ways to change land use practices that have deleterious impacts. Developing countries are extremely keen to understand these issues, and know what policy-tools are available to promote more sustainable patterns of consumption and production of biofuels. Moving forward, wider mechanisms like the EU's Common Agricultural Policy – and its reform, and the role of World Trade Organisation's regulations in regulating biofuel trade in a sustainable, and fair and equitable way, need to be considered. The role that the MEAs should play in this debate needs to be decided.

3. Evidence and Research needs

One of the most widely agreed points by the group was the requirement to collate existing scientific evidence on the impacts on biodiversity and natural resource management as a result of biofuel production, which still appears to be a big gap. There are still simple questions to be answered to help us understand the impacts of different types of biofuels at both domestic and international levels. The UK can lead by example by identifying what biofuel/biomass production can contribute best in a sustainable manner – where in the landscape, under what circumstances and at what scale – i.e. a landscape scale approach. The approach to biofuels should be to ensure they make a good contribution to the economy, are socially acceptable, and are not negative to the environment. The Rural Economy and Land Use Programme has been doing useful work under its RELU-Biomass Project⁴. More widely, the UK should establish better ways to manage land and water resources; this evidence would be a valuable contribution to the debate on how to bring forward these issues at the right scale and in a transferable way that could be replicated elsewhere in other countries. This evidence will also allow us to assess and maximise levels of sustainable domestic (or regional) production and what sustainable import levels are required. We need to understand if, and how, the MEAs can help Parties to disentangle these complexities and start dealing with issues – to establish robust policies and take appropriate actions. Although we are likely to be able to understand and predict the impacts of changes in crop type on habitats and species, it will be more difficult to predict impacts on ecosystem services. This might be possible in a qualitative way, but more difficult quantitatively.

Defra's 'Research Programme' was identified as one potential mechanism to coordinate the evidence collation needs (synthesize and use what we already have) and assess the evidence gaps, before any further detailed research is undertaken. Other useful mechanisms are:

³ Global Bioenergy Partnership <http://www.globalbioenergy.org/>

⁴ RELU-Biomass <http://www.relu-biomass.org.uk/>

- systematic reviews⁵, such as those undertaken at the Centre for Evidence-Based Conservation, University of Bangor; and
- work at Cambridge University⁶ on defining and developing conservation evidence, identifying the questions of greatest interest to UK policy makers and, identifying the future issues facing the UK environment [N.B. workshops are planned during 2009 to identify the next important questions to be answered on biofuels].

There is also an emerging cross-Whitehall research programme on biofuels, led by Department for Transport and co-chaired by Defra's and DfT/BIS's Chief Scientific Advisers. During its scoping phase, one of the gaps identified was the lack of evidence on the impacts of biofuels on biodiversity, so this provides a key opportunity to ensure this work is taken forward within the UK. Specific recommendations will be made to Ministers on what further research is required to fill the gaps as well as the necessary funding requirements. Funding through the EU's Framework Programme 7 should also be maximised.

At the Convention on Biological Diversity (CBD) CoP10 in Japan in October 2010, there will be discussion on all the evidence that the CBD Executive Secretary has collected on minimising negative impacts on biodiversity. It is not the intention of CBD to develop its own sustainability criteria, but to feed into other international processes. It is therefore important that the UK maintains its involvement in international sustainability processes such as GBEP and the round tables, and feeds in examples of good practice. The MEAs should also strengthen their links with these various international initiatives.

Many developing countries are calling out for assistance and evidence on how to develop sustainable national biofuel production. Through conventions like the Ramsar Convention on Wetlands and its Scientific and Technical Review Panel (STRP)⁷ there is the opportunity to provide the methodologies, advice, mechanisms and practical approaches to help guide national decisions (policies, partnership agreements etc.). UK evidence should be fed into such processes.

4. The interface between science and policy

A well functioning science-policy interface should allow the UK, and other countries, to ensure that biofuel (bioenergy) policies are scientifically robust, and that any targets to which we are bound can be delivered sustainably. This is lacking at present.

Significant shortcomings exist in the way science informs biofuel policy in terms of both the availability of relevant scientific information and the lack of recognised mechanisms to provide the evidence in the required way. There is a need to get ahead of the policy-making process and to anticipate the issues in time to input into developments in a policy-sensitive environment. For example, the EU's target⁸ for energy in transport – 10% share of energy from renewable sources (mainly to come from biofuels) by 2020 - is an example where policies have been agreed ahead of scientific evidence, i.e. what types and amounts of biofuel can be produced and sourced sustainably through EU and global biofuel markets?

Evidence and research is needed to highlight which biofuels are best, and to ensure they are grown at the right scale and in the right place. At present there are insufficient mechanisms in place that

⁵ Systematic Review: creating an evidence-based framework for review and dissemination of scientific evidence to support biodiversity conservation. The framework enables systematic and unbiased assessment of evidence on effectiveness of interventions in achieving objectives as well as efficient identification of research gaps/requirements. <http://www.cebc.bangor.ac.uk/>

⁶ Cambridge University scientific evidence for policy <http://www.zoo.cam.ac.uk/zoostaff/csg/sutherland.html>

⁷ Ramsar's Scientific and Technical Review Panel http://www.ramsar.org/strp/strp_rest_index.htm

⁸ EU Renewable Energy Directive

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF>

target production to ensure sustainable development is achieved. Within the MEAs more evidence is needed to help in future negotiations and to strengthen the language of the decisions and actions.

The science-policy interface requires mechanisms that are able to provide policy makers with answers quickly. Firstly, this requires more and better horizon scanning to predict the most important questions to answer in advance of the formulation or implementation of policies. Secondly, mechanisms that bridge the science-policy interface and bring scientists and politicians together, such as the Natural Environment Research Council's Living With Environmental Change programme⁹ are required. The UK should commission more 'joining-up' programmes and projects. The group noted that at the international level, discussions at the recent MEA meetings were very much politicised and would have benefited greatly from independent and credible analysis and advice on biofuels in advance of the policy discussions. A science-policy platform like the proposed Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) would therefore have been very useful.

5. Priorities from global, European and UK perspectives

Strengthening the evidence base on the impacts of biofuels on biodiversity and natural resource management (e.g. water) and using better the information we already have was thought to be a key priority. It is critical to establish under which circumstances each biofuel can be beneficial economically, socially and environmentally. Valuation studies of the cost of impacts are necessary.

Identifying, creating and disseminating examples of UK biofuels (bioenergy) research, and good policy and practice should be undertaken, particularly in terms of knowledge and technology transfer to producer and developing countries. With evidence and good practice, the UK can lead by example and push a sustainable biofuels agenda forward, providing a strong negotiating mandate e.g. at the EU level and at MEA meetings, where the decisions and resolutions must be strengthened in the future.

The UK should establish strategic bi-laterals with key developing and producer countries to build practical understanding of how to implement sustainable practices internationally. Such bi-laterals could also function to foster mutual understanding of issues to help during negotiations at future MEA meetings. Getting other Parties to understand UK views and building alliances ahead of the MEA meetings would be beneficial.

The UK should continue to support and contribute actively to the work of international sustainability initiatives such as GBEP, RSB and RSPO. It is important for these initiatives to be linked-up with the MEAs such as the Convention on Biological Diversity, the Ramsar Convention on Wetlands, the Convention on Migratory Species and its relevant agreements. UK officials contributing to these initiatives should ensure that the links are made with all relevant parts of UK government responsible for, or with an interest in, biofuels policy (e.g. DfT, Defra, DECC, BIS and DfID) to ensure coherent cross-departmental science and policy positions. In terms of the work of GBEP, the UK should seek to ensure that work relating to sustainable production of biomass for bioenergy, including biofuels, takes adequate account of the impacts on biodiversity. The GBEP sustainability criteria and indicators for bio-energy are expected to be ready by May 2010. The UK should look to engage in the debate on these at the CBD CoP10 and other MEA meetings. The longer term aim should be to get the MEAs to adopt robust sustainability standards.

The UK should work for strong co-ordinated EU positions on biofuels and bioenergy at future MEA CoPs.

The UK should work on a consistent and joined up approach to biofuel and bioenergy issues across the MEAs at future MEA meetings, and in other relevant international fora - e.g. in the development and evaluation of EU policy.

⁹ NERC's Living With Environmental Change programme <http://www.nerc.ac.uk/research/programmes/lwec/>

Invasive Alien Species and Wildlife Diseases working group report [\[ppt feedback\]](#)

Chair: Ruth Cromie (WWT)

Participants: Natasha Ali (RBG, Kew), Ian Bainbridge (SNH), Jessa Battersby (JNCC, rapporteur), Pam Berry (ECI), Chris Cheffings (JNCC), Nicola Crockford (RSPB), Thomas Haines (NBI – bryophytes and lichens), Hugh Laxton (UKNLO), Rebecca Lee (WWT), Dave Middleton (Defra), Andrew Musgrove (BTO), Trevor Salmon (Defra), David Stroud (JNCC), Mark Tasker (JNCC)

1. Key implementation requirements

It was noted that the GB Invasive Non-Native Species Framework Strategy applies only to GB, not to Overseas Territories and Crown Dependencies (OTs/CDs). Given the level of threat to island ecosystems, and levels of endemic biodiversity in the OTs, it was felt that immediate action was required to deal with the greatest threats, coupled with a longer term strategic approach.

World and regional trade systems, and the economic benefits of trade versus their environmental costs, were discussed. Globalisation was considered to be a problem in this respect. Very often trade restrictions apply to imports that could threaten or have an impact upon agricultural or horticultural products or where direct human impacts are recognised, but not to imports that could threaten wildlife. The costs of the long term impacts on biodiversity of invasive alien species (IAS) and wildlife diseases (WD) are seldom considered as opposed to the benefits of allowing certain types of trade (imports for zoos were considered an exception and an example of best practice). Risks to biodiversity should be adequately incorporated in legislation and policy in terms of the loss of wildlife value. It was felt that development of an EU strategy and possibly legislation to deal with some of these problems at EU level was very timely.

The perceived costs and difficulty of dealing with IAS were seen as barriers to achieving successful control. It was noted that very few studies have compared the costs of good prevention mechanisms with the costs of not acting to prevent IAS arriving and their subsequent long-term effects on biodiversity and ecosystem services, which might help to change the perception. It was also a good approach to work on small projects that could be completed successfully and where the success could be publicised as an example of good practice, rather than attempting large scale, expensive projects where outcomes were uncertain.

Ensuring clarity of roles and responsibilities were seen as essential for achieving action. Very often MEA texts contain long lists of Actions and Resolutions, but unless those responsible for carrying out the activity are identified, there is a high likelihood of inaction. Obtaining sufficient funding to tackle problems, building capacity and knowledge in areas of greatest need and understanding the economic drivers of change were all seen as resource limitations to achieving effective actions on IAS.

The group considered effective communication a really important issue. This could involve developing public and political understanding and support for strategic approaches and actions and having wider engagement at different levels, across all sectors. Sharing best practice, prioritising action and having effective science and policy maker dialogue were also considered essential for dealing with IAS and WD effectively. Getting stakeholder input to policy and developing stakeholder interfaces were also important.

2. Key emerging issues

Climate Change was considered one of the big issues and raised several questions. For example, how should decisions be made on the status of species that have arrived in the UK as a result of climate change, in terms of consideration of native / non-native / invasive non-native status, and how should assessments be made on which species to manage? In relation to WD, what should be

done about serious disease threats associated with climate change? The increasing movement of humans and other species as a result of climate change and other factors could result in suddenly emerging diseases, both completely new and in new locations. There may be low levels of immunity in areas where these diseases are not endemic, which could make the effects much more severe. Surveillance of wildlife diseases lacks the information necessary to produce models to assess the impacts. Good contingency planning was considered to be one way of dealing with these problems, coupled with preparation for the unexpected, and having a good risk assessment process in place.

It was also noted that emerging policies to combat climate change could increase the problems of IAS. For example, the need for reducing global CO₂ emissions has resulted in biofuels, often crops with IAS characteristics, being increasingly grown in countries in which they do not originate.

The effects of the economic crisis were likely to have both positive and negative impacts over the next few years. Reduced trade could have positive effects, but reduced funds for biodiversity conservation could have negative impacts.

3. Evidence and Research needs

Engagement with academia was considered a major issue. There was an urgent need to develop better links between academia, research funding bodies and policy makers.

The increasing threat of IAS meant that new and effective methods of control and eradication would be required. Biological control was one mechanism that could be effective, but research was required into costs and benefits, effective use and the potential dangers of using bio-control agents. There was also a need for research on identification methods, particularly for plants because of the issues of erroneous nomenclature in legislative lists.

Global transfer of information was considered important. This could be achieved through capacity building in developing countries, training surveyors and developing different methods for identification. Linking the puzzles of databases together at a global level was also important, as was keeping databases up-to-date so that global movements of species could be tracked. Bringing good practice from other sectors to adapt for use in the biodiversity sector could also be useful. Surveillance for early detection and as a component of risk assessment should be improved.

4. The interface between science and policy

It was very important that scientists understand the relevance of international conventions and policy developments and tailor their research to address policy questions. Results should be fit for purpose and translate easily and understandably into policy. This was not happening effectively; some problems were identified as likely causal factors.

Scientists and policy makers operate on different timescales. Policy development was often short term, but scientific research often required longer timeframes and there was a need to improve understanding and dialogue on both sides of the implications of the differences in approach. Scientists also wanted to provide 'perfect science' whereas policy makers often required quick answers to complex questions.

To overcome these issues scientists should be engaged as early as possible in the policy making process. This would help to ensure that policy makers understood the complexity of issues, but also ensure that scientists got clear messages on the research required. Conversely, sometimes the policy making process could operate without engaging scientists, but could make sure that they were engaged at relevant stages. A risk based approach could be used to assess the implications of using the minimum level of knowledge required to make informed decisions.

Often scientists and policy makers didn't speak the same language and there was a need for a translation process involving those with an understanding of both processes. This includes taxonomy issues. Simplifying messages and language used and ensuring that science messages were appropriately delivered would help in this process. Sometimes policy makers were unwilling to

engage with the scientific evidence for political reasons, developing the negotiation skills of scientists was an important consideration.

5. Priorities from global, European and UK perspectives

Global priorities included IAS work in the Overseas Territories (OTs). Accessing funding and getting immediate action were considered to be of high importance. However, the conflicts in funding priorities between metropolitan UK and the OTs had to be recognised. Global sharing of information, best practice and capacity building were all priorities, involving development of effective communication streams. This should include providing guidance on interpreting MEAs, which can be difficult to understand. Strategies and action plans should be implemented as a matter of urgency and it was recognised that immediate action is very important. Creative thinking was considered an important attribute to achieve delivery of these priorities, including accessing novel funding opportunities for the OTs and looking across Conventions to provide policy links - e.g. for countries to use stricter measures under the Convention on Trade in Endangered Species (CITES) to deliver some trade restrictions.

Policy influencing was a priority in Europe and in the UK, including the development of an EU strategy on IAS and integrating IAS considerations into other policy sectors e.g. agriculture, transport, trade and fisheries. Understanding the economic drivers of change including socio-economic factors was also really important to combat IAS impacts.

Biosecurity should be improved, including raising awareness of travel implications among the general public.

Ecosystem Approach Issues working group report [\[ppt feedback\]](#)

Chair: Nick Davidson (Ramsar Convention Secretariat)

Participants: A.J. McConville (Institute for European Environmental Policy), Amanda Gregory (JNCC, rapporteur), Andy Swash (Defra), Bill Watts, (Environment Agency), Caryn Le Roux (Welsh Assembly Government), Chris Mahon (IUCN UK Committee), David Pritchard (JNCC Joint Committee), Diana Mortimer (JNCC), Eimear Nic Lughadha (Royal Botanic Gardens Kew), Hilary Kirkpatrick (Council for Nature Conservation and the Countryside), Ieuan Joyce (JNCC Joint Committee), James Screen (Government Office for Science), Jane Desbarats (Institute for European Environmental Policy), Janet Barber (Kaleidoscope Research and Policy), Jean Smyth (Defra), Joanna Drewitt (Scottish Government), Joanna Robertson (CCW), Martin Brasher (Defra), Pam Berry (Oxford University), Peter Brotherton (Natural England), Peter Costigan (Defra), Sarah Moon (Defra), Sharon McAuslan (Defra), Suzanne Perry (Natural England), Tina Yates (JNCC), Trevor Salmon (Defra).

1. Key implementation requirements

Three key points about the Ecosystem Approach (EA) and Ecosystems Services (ES) set the context for this working group:

- the CBD Ecosystem Approach is not an additional commitment – it is a tool and checklist to confirm the sustainability of projects;
- business as usual is not an option – altering to sustainable practices through the EA approach will result in trade-offs and there will be conventional “winners and losers”;
- which ecosystem services (and how much of each) do we need now and what and how much will we need in a changing world? And what happens if we can’t get them?

After broad discussion the group felt there was not a complete understanding of ecosystem services within the different Government sectors and how the EA could be applied. As a holistic approach the EA should deliver sustainability by providing a framework, with a checklist, of the elements required to deliver and maintain projects over longer time scales than the policy and commodity based context currently provides. For example, it is not just about planting mangroves but checking that they have survived 5-10 years later and then replanting as required. Looking beyond the biodiversity conventions the EA can be an approach to help individual decision makers identify the optimum set of benefits for decision-making (not just to protect ecosystems). A key element is the socio-cultural dimension which, in many societies, is intimately intertwined with functioning ecosystems.

2. Key emerging issues

One of the key issues addressed was that of language. The language, terminology and interchangeability of terms such as environmental services, ecosystem services, benefits, etc are different between the MEAs and even within the biodiversity sector itself. The Ramsar Convention and the study on The Economics of Ecosystems and Biodiversity (TEEB) have recognised the importance of the lack of continuity and understanding of terminology. The group agreed these issues need to be addressed but also considered whether changing the terms to ‘life support systems’ would allow for better public engagement and understanding; likewise whether using ‘sustainability assessment’ rather than ‘strategic environmental assessment’ / ‘environmental impact assessment’ (SEA/EIA) would be preferable. Language barriers also exist across cultures and in governance. Different cultures respond to language used or ideas suggested in different ways, e.g. the provisioning services debate where farmers provide goods but also environmental services. Using the EA individuals and communities can see how and where the decisions have been made along with the benefits and trade-offs.

Valuing ecosystems, future ecosystem services, functions and traits of species and their future potential use is a challenging area but one that needs to be addressed. Ecosystems represent future genetic resources, provide opportunities for climate change adaptation, flood/storm defence, etc. This potential may be lost if the value of long term ecosystem resilience is largely ignored – especially when it is not perceived to deliver or be exploited immediately. Failing systems also represent lost opportunities. Can we define what level of biodiversity is required to deliver critical ecosystems and how close are we to the limits now? We have little understanding of the effects of changes to ecosystems, the critical thresholds or the non-linear effects of ecosystem change. These issues have implications on the post 2010 targets.

Links to climate change negotiations need better communication through the UN Framework Convention on Climate Change (UNFCCC), Reducing Emissions from Deforestation and Forest Degradation (REDD), or the Millennium Development Goals (MDGs). Forests have been the primary focus for carbon sequestration under REDD but other ecosystems may present greater opportunities, e.g. sustainable use of wetlands. Wetlands have historically been used for mitigation processes; flood protection and storm defence, but they can provide real additional value with their carbon storage capacity. It was acknowledged that the science is generally weaker and the wetland systems are more complex than forests.

3. Evidence and Research needs

Better evidence of the added value of the EA on the ground is required. The group asked: what is the additional value provided by following the EA; what does it deliver on the ground; have assessments been done on projects following the EA; and what was delivered?

It was recognised there are lots of tools which assist with ensuring that sustainability issues are addressed in projects. In many cases these tools help to apply the EA without making reference to it. These successful approaches should be identified and communicated, e.g. water companies are now taking account of ecosystem services although they are not using these terms. The Marine Stewardship Council for fisheries and Forest Stewardship Council for timber are demonstrating an ecosystem approach for commercial reasons – the accreditation ought to promote the EA as they are using and making money from the approach.

While many case studies are available, there are few showing good examples of projects which fully demonstrate the benefits of following the EA in different ecosystems. Extracting and feeding back the lessons from each case study is still a weakness. Examples of projects which follow sustainability principles that have resulted in an ecosystem approach are required. The group noted that an IUCN publication and the CBD website showcase some examples. All the case studies need to be reviewed to identify what drivers and incentives cause a project to be managed in a particular way.

What are the benefits of the schemes? Can these benefits be used to enable benefit transfer (where valuations/benefits in one project can be used to guide other projects) and the winners and losers associated with land use change projects identified? The group asked whether payments for ecosystems services were appropriate; is there a need for compensation; how, when and why do you pay compensation; and when it is not feasible? This is a complex issue - often it is difficult to identify beneficiaries (who may not know they are benefiting and who may be miles from where the project has taken place), whereas the losers definitely know they are losing.

Discussion also focused on understanding what ecosystem services we are going to need in the future, and in a changing world. We need to retain biodiversity for a multitude of reasons but there was an impression that there is not enough information on capacity in natural systems, e.g. pollinators, etc. Ecosystems also provide genetic resources and loss of biodiversity results in the loss of genetic resources – how do you value something that you no longer have or place a value on genetic resources for potential future use? This is a huge challenge. The benefits of ecosystem

services at a general level, and the benefits humans derive directly from ecosystems, need to be made clearer, but without deconstructing what ecosystems provide into sectoral commodities.

4. The interface between science and policy

What are the risks of the EA being ignored and do we have a good enough vision of what will happen if we do not practice the EA? The EA confirms sustainability and, as such, should be used and communicated at the international level through the Department for International Development to deliver the Millennium Development Goals (MDGs) – not just MDG-7 on environmental sustainability but also other MDGs (eg, MDG-1 on hunger). Increasing global populations and wealth will have implications on demands for water and food and these areas need further debate. The socio-cultural aspects of the MA must not be ignored. The structure and functioning of many communities and societies as a whole is intimately intertwined with the functioning of ecosystems. This is often under-appreciated in policy making. The loss of a service, perhaps as a consequence of a decision or policy, can cause the loss of traditional land-use and knowledge, fractured cultural practices, breakdown of social structures and modularisation of economics in particular sectors.

The MA follow-up is undertaking a lot of research on the points discussed. The group felt that tools which can be directly applied were more important than another global assessment. This would help policy makers to understand who gains from the benefits of the EA, document what decision makers need to help them make informed decisions and, from both a science and policy perspective establish what constitutes a failing ecosystem service. A science/policy interface group at the national level should look at resilience in ecosystems and the post 2010 targets.

5. Priorities from global, European and UK perspectives

The group felt the main priority was to ensure that the climate change debate fully addresses ecosystem sustainability issues, works with the biodiversity sector to recognise the extent of nature-based adaptation and the role of all ecosystems in carbon sequestration. The benefits of the ecosystem approach need to be highlighted to other sectors – particularly the international development sector.

The issues surrounding the application of the MA were broadly similar between metropolitan UK and the Crown Dependencies / Overseas Territories but the impacts may be more intense in small island states. It was noted that conflicts and issues are generally more concentrated - with loss of biodiversity more acutely experienced, genetic resources less explored, and trade-offs more extreme. It was acknowledged that there appeared to be good communications between the islands with great support and action between them. It would be helpful to have case studies of project work in small island states employing the ecosystem approach.

Looking forward, the UK National Ecosystem Assessment presents a major opportunity to increase awareness and communicate the ecosystem approach.

Island Issues working group [\[ppt feedback\]](#)

Chair: Jack Ward (Department of Conservation Services, Bermuda)

Participants: Ian Bainbridge (SNH), Juliet Brodie (Natural History Museum), Vincent Fleming (JNCC), Sarah Fowler (Naturebureau International), Harriet Gillet (UNEP-WCMC), Jerry Harrison (UNEP-WCMC), Louise Magris (States of Jersey, Planning and Environment Department), Elizabeth Moore (JNCC, rapporteur), Mike Pienkowski (UKOTCF), Richard Selman (Department of Agriculture, Fisheries and Forestry, IoM), Andy Tully (Defra), Tony Weighell (JNCC), Dominic Whitmee (Defra), James Williams (JNCC).

1. Key implementation requirements

The group discussed the relevance of MEAs to the Overseas Territories and Crown Dependencies (hereafter referred to collectively as 'the Territories'). It was noted that the agreements are a useful lever to encourage politicians and others to undertake nature conservation work. It was noted that there were a number of Territories who had not signed up to some of the MEAs and that the Territories could be encouraged to ratify more of the MEAs. The benefits to the Territory of joining the MEA would need to be made explicit in plain English, along with any obligations of relevance to the territory. The need to consider Territories at an early stage in the process of signing up to an MEA was noted.

The group agreed that there is a general lack of knowledge and understanding about the MEAs in the Territories and it would be useful to get experts who are familiar with the MEAs to convey information to the local decision makers. This was done for the Ramsar Convention and resulted in all the Territories ratifying that Instrument. The MEAs set out global priorities and are a strong mechanism which the territories can use for identifying economic indicators of livelihoods, sustainability and well-being which are issues of relevance to the territories. The importance of clear communication and the need for information in an island context was stressed.

2. Key emerging issues

The way in which the Territories engage with the major meetings of the MEAs was discussed. A representative from a Territory can join the metropolitan UK delegation, however, hitherto the cost has been funded by the Territory and the information and experience gained only benefits that Territory. A process could be developed whereby clear island specific guidance is provided in sufficient time for the Territories to feed into the MEA meetings, and information relevant to the Territories is fed back to the Territories following the meetings. This would minimise the reporting burden and maximise the opportunities for the Territories to engage with the MEAs.

The issues of funding and capacity were discussed. It was noted that the Territories are not included in the definition of Small Island Developing States used by a number of MEAs including the Convention on Biological Diversity¹⁰ and that funding therefore has to come either from metropolitan UK or from the Territories themselves. Sustainable sources of funding are hard to secure. The problem is exacerbated by the split of responsibilities in metropolitan UK across multiple departments. The group agreed the need for a focal point on biodiversity for the Territories from metropolitan UK.

Given the constraints the territories face, the group agreed that there is a need to make better use of existing networks and to share information and expertise as much as possible. This is a focus of the work of the JNCC's OT Research Programme¹¹. The group agreed that there was value in promoting successful examples of work in the Territories, for example the work in the south Atlantic

¹⁰ <http://bch.cbd.int/thesaurus/term.aspx?termid=4596>

¹¹ <http://www.jncc.gov.uk/page-4113>

to successfully reduce bycatch of albatrosses and petrels. This could help raise the profile of the MEAs in the Territories and raise the profile of the Territories in metropolitan UK.

The group identified sustainable management of fisheries as an emerging issue for a number of Territories. Initial investment in fishery protection can subsequently re-pay itself through income from fishing licences (e.g. South Georgia and the South Sandwich Islands and the Falkland Islands). But it is hard to get that initial investment and without it illegal, unregulated and unreported (IUU) fishing is able to continue, stocks aren't managed sustainably and the Territories lose vital income. It was agreed that research on the economic costs and benefits of the management of these and other marine issues would be useful with links to valuation of ecosystem services.

3. Evidence and Research needs

It was noted that there is a general lack of baseline survey in the territories and a poor awareness of the high levels of endemism, particularly in the marine environment. These are all powerful arguments for economic valuation of ecosystem services. It was also noted that there is lots of disparate information about the territories but this information needs processing. For example there are a number of taxonomic collections in metropolitan UK institutes which could be made more widely available and would be a valuable summary of resources in the territories. The problem is finding capacity (and expertise) to do this.

4. The interface between science and policy

The group noted the short-term nature of the political agenda which is often reactive and hard for science to influence. The lack of continuity of Ministers and staff at different levels in the Territories and metropolitan UK poses problems in terms of communication and awareness of the MEAs, as well as a commitment to conservation. It was noted that initiating novel research is hard to do given policy constraints. The direction of priorities in the Territories is often consistent with metropolitan UK, for example on invasive alien species. Funding for projects on this issue is driven by metropolitan UK priorities.

5. Priorities from global, European and UK perspectives

It was noted that the Territories can achieve a lot through the advantage of their small size, and they can and should be used as models to celebrate success. The Territories are also good examples at a small scale of the ecosystem approach and links between ecosystem services and civil society are often much clearer and easier to understand and value. The priority is to clearly communicate best practice and key messages about MEAs between the Territories and metropolitan UK and as well as between Territories and share information and tasks to maximise capacity.

Session 3: Final plenary

Ian Bainbridge thanked the rapporteurs, all participants for constructive discussions, and all those involved in setting up the meeting; the briefing papers in particular, were a valuable resource.

The final session of the day was chaired by Martin Brasher, Deputy Director Biodiversity Programme at Defra. He echoed Ian's comments on the briefings and stated he was delighted that the meeting was happening; it had first been discussed during the previous round of CoPs, four years previously. It is clear that there is a need to get Conventions to work together more effectively, not least due to the increase in costs of running them – the impact of recent exchange rate changes alone had been to increase the total cost incurred by UK government by more than £400,000, so best value for money is crucial. A number of recurring themes arose in the previous feedback session, including the science policy interface, economic valuation, and how can the UK provide a lead.

Discussion in the final plenary centred around the following subjects.

- Currently biodiversity subsidises trade, a paradigm that needs to be re-thought. Can the MEAs work together to use the results from the TEEB (The Economics of Ecosystems and Biodiversity) to put into context the cost and values of biodiversity in providing ecosystem services? The Government is very interested in the TEEB study, and the opportunities it offers for developing a 'green economy', but it is not clear how the results will be able to be applied.
- In considering how the MEAs should work better together, this really requires consideration of how parties (who form the MEAs as groupings of countries), can be more consistent in the resolutions adopted at CoPs, and how Parties can implement what they agree to at meetings. MEAs do have differences, but they also are trying already to look at harmonised implementation – e.g. for reporting on the 2010 target.
- There may be an opportunity for government(s) to look at the decisions of CoPs as opportunities – for example might there be cost savings as a result of more effective policy making. This is done to some degree already, but there is probably more that can be done in terms of the evaluation of the benefits of policies.
- A question was raised about the possibility / opportunity for rationalising MEAs, or making them work more efficiently? This is difficult; there is a cost of holding large meetings across the globe on a regular basis, but that needs to be balanced against the potential risk of loss of impetus at that global level if meetings are held too infrequently or are unsuccessful. It is important that there is time for implementation between meetings and less frequent meetings may mean more money for implementation. One way in which progress might be made faster is to think about the information base on which decisions about implementation are made – there should be good opportunity to do this in the UK.
- Governments implement Conventions, and this will lead to degrees of consistency within them, but more integrated thinking is needed. That was why the themes for the day were chosen to be cross-cutting. It is important that the day's discussion do not peter-out, but are the start of doing work differently, to bring in other policy sectors. One particular beneficiary may be that implementation in the Crown Dependencies and Overseas Territories can be enhanced, as they may be in the best position to benefit from, for example, the CBD. Another is how any post-2010 target, overarching across the MEAs, may be worded.
- There are perhaps two key areas which came out of all of the workshop sessions – boundaries, and communication. Boundaries are helpful in some instances, in making a subject discrete and achievable, but we also need to work across boundaries, for example when looking at the value of ecosystem services. In promoting the results of the MEA deliberations, and in taking results from one to another, more consideration needs to be given to communication issues, and

especially clarity of language. Clearly writing down what we as UK are trying to achieve is an important step.

- The follow-on from this workshop may therefore be to identify over the next few years, between Government, its agencies and NGOs, a strategic UK agenda and priorities in preparation for the next round of MEA meetings. This can be both in terms of disseminating what is happening, and the policy needs for science evidence / capacity development, and also in terms of informing the general public what is going on. If this results in a good process, it could be shared with other countries in the next round of CoPs.

Peter Bridgewater, Chair of JNCC, closed the conference by thanking participants for taking part energetically. The nature of the audience, with a cross section of both Governmental and non-governmental actors had helped to inform discussions. Peter highlighted the following as take-home messages:

- silos, do exist, and it is important we find effective ways of moving knowledge between them;
- a better science-policy interface at both national and international levels is needed and clarity of information and translation is needed in either direction. JNCC has a key role here;
- whilst having just a single biodiversity MEA might be ideal, that situation doesn't exist at the moment, working between Conventions was thus necessary;
- the TEEB report is an opportunity which must be seized, to bring out the benefits that biodiversity provides to people's everyday lives;
- there continues to be an issue of resources and focus for involvement in MEA processes by the Overseas Territories and Crown Dependencies;
- more working together is necessary, at national and international levels; a strategic UK approach to the next round of MEA meetings, based on a thematic approach, is clearly desirable.

Following the close of the conference, Baroness Young launched [*An Atlas of Wader Populations in Africa and Western Eurasia*](#), recently published by Wetlands International.