

## Experiences of applying the Ecosystem Approach: Policy Implications

This briefing focuses on the implications for policy makers wishing to fund or advocate the adoption of the Ecosystem Approach. It is based on a review of 24 natural resource management projects across the UK and Ireland that were labelled as using an Ecosystem Approach.

### What is an Ecosystem Approach?

The Ecosystem Approach has become a popular approach to managing complex environmental resource use. It is a holistic, systems-based and participatory approach to ecosystem management, as defined and used by the Convention Biological Diversity (CBD). The CBD provides 12 principles (the 'Malawi Principles') as a guide to implementation. The approach links 'adaptive management' based on understanding ecosystem functions and processes, together with arguments for decentralisation, stakeholder participation and empowerment in decision-making. The aim of an Ecosystem Approach is to protect biodiversity, whilst ensuring sustainable resource use and equitable distribution of the benefits arising. An Ecosystem Approach is not the same thing as an ecosystem service assessment. An assessment focusses on identifying and quantifying ecosystem services, often resulting in a technical and systematic analysis of services, rather than the holistic and participatory ethos of an Ecosystem Approach. However, the two approaches can be usefully combined, by using the ethos of an Ecosystem Approach in decision making based on evidence derived from ecosystem service assessment.

### What does it offer that is different to existing approaches?

An Ecosystem Approach is a new paradigm for biodiversity conservation as it links biodiversity conservation and restoration to wider delivery of benefits e.g. food, drinking water, sense of place etc at a landscape scale. It has the potential to reframe how we think about land and water management and what our environment is for. Critics argue that other paradigms e.g. multifunctional land use or sustainable development are similar. However, the Ecosystem Approach has the potential to bring in new stakeholders to environmental decision making by illustrating how they benefit from, and contribute to, ecosystem services.

When an Ecosystem Approach is combined with ecosystem service assessments, these services are often quantified and given monetary values. This quantification can be contentious: advocates believe this helps make conservation more visible in planning and decision making, but critics argue that the values may be misleading, and entrench the problem of *valuing what we have measured, rather than measuring what we value* about our environment. Whether or not valuation studies are used, an Ecosystem Approach requires planning and decision making processes to consider complex environmental systems and how they change over time and in different settings – it is important that this is not forgotten.

A number of issues and challenges associated with the Ecosystem Approach are common to other approaches to natural resource management, such as building trust between partners. This suggests that those implementing an Ecosystem Approach can learn from and build on existing lessons learned by partnership based natural resource management projects.

### How might this change existing approaches?

The focus on a holistic, systems-based and participatory approach has implications for (1) statutory targets, (2) organisational cultures, (3) incentives and monitoring. First, some existing statutory targets, such as those for Special Sites of Scientific Interest, can be seen as inappropriate as they are fixed and focussed on single species not the ecosystem. Second, taking a holistic and participatory approach requires skills in partnership working and knowledge elicitation. Integrating available information covering all parts of the ecosystem for an adaptive, systems-based approach requires a trade-off between accuracy and certainty, which may jar with traditionally trained scientists or

regulators. Third, incentives should reflect payment by results as well as activities. The shift to ensuring the beneficiaries pay those delivering or safeguarding ecosystem services will also require a radical redesign of land and water incentives. Finally, an Ecosystems Approach changes what data are required for decision making. As well as ecological data, it requires data on peoples' perceptions of the environment and the socio-economic factors influencing land and water management or the impacts of management interventions.

### How can the Convention of Biological Diversity's Malawi Principles help?

The principles help ensure the ethos of the approach is implemented when used to plan a project. If the principles are not used as a planning and evaluation tool, there is a risk that a more technocratic focus on measuring and monitoring ecosystem services usurps, rather than complements, the Ecosystem Approach. Indeed, many projects neglect the principles that are most different to the technocratic approach, i.e. using different knowledge and empowering stakeholders, while thinking about ecological processes over the long-term is also difficult. Whilst attempts to reduce these to a shortlist make such lists more succinct, their brevity and simplicity may mask the complexity of managing a socio-ecological system, in turn hindering adaptive management to avoid crossing thresholds and tipping points.

#### The Malawi Principles

Principle 1: The objectives of management of land, water and living resources are a matter of societal choices.

Principle 2: Management should be decentralized to the lowest appropriate level.

Principle 3: Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.

Principle 4: Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context.

Principle 5: Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.

Principle 6: Ecosystem must be managed within the limits of their functioning.

Principle 7: The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.

Principle 8: Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.

Principle 9: Management must recognize the change is inevitable.

Principle 10: The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.

Principle 11: The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.

Principle 12: The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

### What might it mean for funding future projects?

Holistic, integrated, landscape scale management involving all relevant stakeholders is neither easy nor cheap. Projects do not have to be expensive in terms of capital but sufficient time and skills are required to build partnerships, learn from doing, and practice adaptive management. Funding for actions beyond the planning stage is essential.

### Research Undertaken

We undertook qualitative analysis of interview data and published documents. The research was funded by Scottish Government Environmental Change Programme 2011-2016,. For more details about the research, please see: <http://www.hutton.ac.uk/projects/ecosystemapproachreview>.

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