

Research Summary: Experiences of applying the Ecosystem Approach

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Introduction

The research was undertaken to support the implementation of the Ecosystem Approach (EcA) in Scotland, by reviewing existing case studies across the UK and Ireland (n=24, both land and marine based projects). The 'Ecosystem Approach' (EcA¹) has become a popular approach to managing complex environmental resource use.

We understand the Ecosystem Approach to be a holistic 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 (see box overleaf). The concept as links 'adaptive management' based on understanding ecosystem functions and processes, together with arguments for decentralisation, stakeholder participation and empowerment in decision-making. This makes the approach very ambitious.

Furthermore, many questions and uncertainties remain, such as:

- How the term was understood in practice
- How the Malawi Principles were used
- The benefits and challenges of the approach; and
- How the approach differs from other approaches to Natural Resource Management.

Research Undertaken

We undertook an in-depth analysis of twenty-four existing projects for natural resource management across the UK and Ireland that had been labelled as examples of the "Ecosystem Approach". Experiences of project implementation were qualitatively analysed, favouring an inductive approach, based on document and interview evidence. Our analysis and data collection were focused on identifying insights relevant to informing the design and practice of future initiatives to implement the Ecosystem Approach. The review adopted throughout the terminology used by the [UK National Ecosystem Assessment](#). The research was carried out within the Ecosystem Services Theme of the Environmental Change Programme 2011-2016, funded by the Scottish Government. For more details about the background to his research, the selection, detail and analysis of case studies, and the full findings, please download the project report from <http://www.hutton.ac.uk/projects/ecosystemapproachreview>

Main Findings

How was an EcA understood in practice?

Although we confined our sample to those projects identified as examples of an Ecosystem Approach, less than half of our sample set out explicitly to implement an EcA. One third of our sample would not describe their approach as an EcA at all, even in retrospect. This variation partially stems from varied understandings of what the EcA means. For most people, an EcA required an emphasis on systems. This has several elements: integration of natural and social systems; stakeholder engagement; holistic assessments rather than single issues; and working at a broader scale rather than piecemeal interventions. However, there were also some aspects that were more controversial or mentioned less often, such as the role of valuation and whether or not an EcA required new approaches to decision-making. Variation in how these elements should be combined

¹ We here abbreviate the Ecosystem Approach to EcA, to avoid confusion with the Environment Agency abbreviation (as suggested by Potschin et al., 2011).

affected how the Ecosystem Approach was interpreted in practice but also led to confusion, disagreement as to whether Ecosystem Service concepts should be emphasised, and risked scepticism that the label may be only a “buzzword”. A true EcA could be characterised as a new paradigm for conservation as it required looking beyond biodiversity conservation to wider delivery of benefits e.g. food, drinking water, sense of place etc, thus it reframes how we think about land and water management.

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.

Using the Malawi Principles

Use of the Malawi Principles was uneven. Although most projects did think about the 12 principles, few explicitly considered them all during the project planning or were able to fully implement all 12 in reality. Even though the projects were variable in their settings and design, similar principles tended to be neglected. These were the principles associated with using different knowledge and empowering stakeholders, and also the principles associated with thinking about ecological processes and the long-term. Our research illustrated that the principles helped draw attention to the complex nature of human-environmental systems. Thus, we recommend that any project claiming to be an EcA should explicitly use all principles in project planning, even if not all principles are relevant to implementation. Using them as a tool for evaluation is also instructive. However, it is essential that they are not used as a tick-box exercise, but in order to reflect on the overall ethos and objectives of the approach – to protect biodiversity, whilst ensuring sustainable resource use and equitable distribution of the benefits arising. The risk of ignoring these principles is that the ethos is

lost, and a more technocratic focus on measuring and monitoring ecosystem services usurps, rather than complements, the EcA.

Implementation: Benefits

A number of benefits of implementing an EcA were implied in the discussion of what motivated projects to take an EcA *viz a viz* other 'business as usual' approaches to environmental conservation and management. These included: (1) more sustainable solutions; (2) stimulating partnership working; (3) better use of public resources; (4) increased public appreciation of the need for nature conservation and (5) re-framing conventional approaches to decision-making. More sustainable solutions refers to developing new ideas about 'good' conservation, away from single issue or small scale interventions, to dynamic and systemic programmes and projects. Partnership working both improved the understanding of the problems, but also built mutual respect and could help build ownership of future solutions. Better use of resources is linked to the first two benefits, as it referred both to ensuring that spend tried to maximise wider benefits arising from an intervention, as well as the potential to pool small amounts from different budgets to generate sufficient to act at a landscape scale. One of the less tangible, but very important benefits of an EcA was its ability to interest new stakeholders in biodiversity conservation, who did not traditionally recognise a link between nature and their own livelihoods or wellbeing. Finally, some argued that an EcA, particularly where ecosystem services are described, created a space for environmental issues in political decision making and planning by including wider benefits in cost-benefit analyses.

Implementation: Challenges

There were many experiences of challenges when implementing an EcA –often relating to the problems of changing existing ways of working and thinking. There are arranged into six broad categories (1) team and partnership working, (2) institutional 'fit' and managing trade-offs (3) stakeholder engagement and uses of knowledge, (4) thinking systemically (5) resources and (6) communicating an Ecosystem Approach. These challenges are often associated with the very attributes seen as key benefits of an Ecosystem Approach: therefore tackling them is critical if we are to promote its ethos. Difficulties could arise when different partner organisations had different priorities or level of interest in the project, requiring careful liaison and team building. Furthermore, it can be difficult to implement a systemic and dynamic approach to environmental management when working with static, single issue statutory targets or incentive schemes and within rigid, organisational hierarchies. Stakeholder engagement requires time, resources and skills; and too often projects did not collect sufficient information on different perceptions of ecosystem services, socio-economic dimensions of resource use; or the impacts of management interventions. Systems' thinking is challenging, although it can be increased through stakeholder engagement and a more holistic approach to monitoring. However, overcoming these four challenges requires resources – interestingly, lack of time was often seen as more of a problem than lack of money, although lack of money to implement *measures* was a major challenge for many planning projects. Finally, the language of an EcA and ecosystem services was seen by many as potentially difficult. This reflects the difficulty in summarising a complex systemic approach in a single word or phrase, although many projects felt that their local stakeholders grasped the ethos very quickly.

How does an EcA differ from other approaches?

Certainly many of the benefits are common to any partnership approach to managing the environment or previous buzz-words such as sustainable development or multi-functional land use. Equally, many of the challenges are common to large scale, participatory environmental management projects, rather than to the EcA itself. All our cases illustrated that progress beyond the statutory minimum to achieve something more participatory and more holistic than a 'business as usual' approach. However, it is possible that the increased ambition could have equally been stimulated by principles of sustainable development or integrated catchment management.

Therefore, we would draw attention to the benefits and challenges involved in engaging ‘new’ stakeholders and for reframing ‘good’ approaches to biodiversity conservation as the most novel and important aspects of an EcA and worthy of particular attention in future implementation processes.

Implications for Future Projects:

The majority of recommendations arising from our analysis are generic project management issues but the EcA specific recommendations are as follows:

- Ensure the project team /partnership share an understanding of the ethos of the EcA as per the CBD.
- Ensure all relevant stakeholders are involved, not just those in the conservation sector. Planners, engineers and developers are often vital to implementation.
- Communicate this ethos consistently to all stakeholders involved – if introducing new concepts or terminology, relate to examples and demonstrations.
- Consider all 12 principles in planning, even if it is not possible or appropriate to reflect them all in implementation.
- Clarify in what way the project is an EcA and how it both builds, and goes beyond, existing partnerships and projects.
- Use demonstration sites to demonstrate what an EcA can look like or result in, particularly where these facilitate ‘peer-to-peer’ learning from one local resident or farmer to another
- Identify and use stakeholders, including scientists, with a holistic perspective on conservation.
- Monitor all aspects of the EcA and Ecosystem services, not just ecological parameters.
- Discuss and decide the project’s position on quantification and monetary valuation of ecosystem services at the outset of the project.

The generic project management issues include:

- Build a process around regular face to face interactions that addressed both current and future conditions.
- Enjoyable social occasions with good food went a long way to sustaining partnerships, particularly when working with volunteers.
- For initial engagement, having an EcA related to the individual interests or agendas (e.g. providing information about cost-savings to individual businesses).
- Use a dedicated, neutral project officer, skilled in facilitation, employed by an organisation seen as an ‘honest broker’.
- Use a champion within an organisation or a local community.
- Where possible, identify how to carry out actions and how to influence decision-making
- Identify how and why local knowledge will be used.
- Respond to absences of data by analysing which data are essential and create an action plan to gather them, but not using this to prevent action.
- Be realistic about what can be known within project timescales and budgets.

Implications for Policy & Funding

- Projects need to be placed within a clear and coherent vision of what an EcA is and the objectives it seeks to achieve, including how it differs from existing conservation management
 - In particular, there should be clarity about differences between an EcA and ecosystem services assessments, and how they can be productively combined
 - Use of the 12 Malawi Principles can aid with communicating the EcA. Whilst shorter versions (e.g. from Defra, Natural England or Scottish Government) are more succinct

and less technical, their brevity and simplicity risks losing the complexity of managing a socio-ecological system – particularly about adaptive management to avoid crossing thresholds and tipping points

- Policy champions are required to mainstream the approach throughout government and public bodies, so that it remains a holistic, participatory approach to managing natural resources
- If an EcA is really to be a new way to help make decisions, then policy makers will need to consider whether existing statutory targets and indicators are still appropriate and how to change these where necessary (e.g. both SSSI and WFD indicators were critiqued in our research, although WFD is an EU, not Scottish Government issue)
- Incentive schemes may also have to be realigned, to ensure payment by results, not just payments for business as usual relabelled as payments for ecosystem services
- Policy decision making will need to understand how to use and critique the use of ecosystem service valuation in decision making to ensure use, not abuse, of such techniques. In particular, avoiding the trap of valuing what is measured, whilst not measuring what is valued.
- Holistic, integrated, landscape scale management involving all relevant stakeholders is neither easy nor cheap. Projects do not have to be expensive but sufficient time is required to build partnerships, learn from doing, and practice adaptive management. Funding for action, even if on a small-scale, not just planning is essential.

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